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FROM THE EDITOR



Our Fourth Year

With this issue, we formally enter our fourth year of publication. The Computer Paper in British Columbia (We note our third year of publication in Alberta in May) I consider to be the coldest in my life. I will be the people who have made this paper possible—our advertisers, our readers and our staff.

A question often asked of us is "How can you give the paper away for free?" The answer is of course—advertisers. And the magic words that make their want to keep advertising month after month are "I am your only PC Computer Paper and would like to buy."

Some of our advertisers have supported us from the first few years. Special thanks to these people who are not just potential but actual good and loyal customers.

I should like to thank all our readers, advertisers and staff, steady and constant. We have your comments, we appreciate your suggestions and we have your support. It makes the occasional late night or late morning worthwhile.

Last but not least, I want to say thanks to all our staff, the people who put endless energy and joy into putting this publication together. Our writers, our proofreaders, people, our photographers, our office staff—these readers are better at our work. And I think that all our staff are on the paper. They put out major efforts to get our content, and best of all, they are passionate fan to work with. Thanks everyone.

Spreadsheets

This month, we take a look at the best-selling spreadsheets. There is something to share by most users, and all spreads may not require Lotus 1-2-3. You share in your opinion, but we have a note up at the top Canadian personal computer software packages. We had promised Canadian Report for this issue. Look for it next month.

Subscriptions

I should have started out this column with a "good news, bad news" line. You got the good news about what is in the issue, or above, the bad news is that our subscription rates have gone up. This puts you in a class with the other 1200 (quarterly) and the steady increase in cost. Our new rates (per \$200 March 1st) I think it is still a reasonable deal at \$24.95 for 12 issues per year (old was \$20.00).

Swap Meet

Shoppers looking for a good buy might also want to check out the Swap Meet being held at the McPherson Centre in Burnaby on February 14 (see page 6).

Enjoy the issue

L. L. L. L.

Karen Singh Shahan
Editor/Publisher

MASTHEAD

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DATE	EDITORIAL	CORRECTION	COPY	ADVERTISING
March 1981	Mar 1	Desktop Publishing	Feb 15	Feb 15
April 1981	Mar 15	Telecommunications	Mar 15	Mar 15
May 1981	May 1	Personal Information Management	April 15	April 15
June 1981	May 15	IBM Computers	May 15	May 15

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Up Taurus

A new mid-level computer weighing less than 7 pounds has been introduced by Taurus. Dubbed the Taurus LX, the 10 Mhz, 16MBs-based unit comes standard with 1MB (expandable to 3 or 6MB) and includes a 1.44MB floppy and a 20MB hard drive. The unit includes a 19-inch VGA-compatible LCD display, serial, parallel and external VGA monitor ports. A 2400-baud modem and additional battery packs are optionally available. The Taurus LX is distributed locally by CM Systems Inc. (604) 792-1001.

Mac Mouse For Three-Fingered Uria

Mac owners who must by now be getting tired of being used back in their faces by other multitasking operating systems can now upgrade to Apple's version of Mac, A/UX 3.0. The only way to run Unix-based programs on a Mac with more than one device (What's a Mac to do?)

Enter the Gnuco SuperMouse for SE and Mac II-series machines. The SuperMouse enables you to assign and modify mouse button actions, change mouse speeds and transfer keyboard to make mouse functions to have business systems. Q-Comp's LightCE Software is featured with the unit, which closely resembles a Logitech CV mouse.

Although many may suspect that accounting software giant, Compuware Associates didn't exhibit at the Pacific Rim Computer & Communications Show, the company has not been idle. Just announced are a number of changes to its ACCPAC Realtime-based accounting program for MS-DOS and Macintosh computers.

The new version (ACCPAC Realtime for MS-DOS version 3.4 and ACCPAC Realtime for the Macintosh version 3.0) has a new lower price of \$10,000 and is now fully GST-compliant. In addition, the company is offering ACCPAC RealtimeGraphic and Custom Reporting for MS-DOS at no charge to users upon registration. Contact Compuware Associates 804/734-1944.

Stay Double Price

Version 1.0 Stay software has been released by Stanford Software, with an increase in price to \$29.95. Previously, version 1.0 had retailed for \$29.95. Including the success of Stay 1.0, a president of marketing, Shelia Clarke said that "the initial functionality in version 1.0 makes the Stay two program very good value for users at \$29.95."

The new version supports the use of a mouse with and is substantially smaller than Stay's other navigation features. Reportedly, the new version also allows advanced configuration of mouse parameters not possible in earlier versions. A French language version is also being considered for release.

Users in the Vancouver local calling area no longer need to call the national

Taurus access number. Also, the new version allows the use of alternative packet-switching networks, notably the Taurus communications network, which can be accessed in a number of major cities with a local telephone number.

Existing Stay users can download the new version to their IBM-compatible computer while connected to Stay. (Users charged to download the upgrade amount to approximately \$3.95 at 2400 baud, or \$6.95 at 1200 baud. A Stay representative said that support for other types of personal computers is not planned at this time.)

For further information, Shelia Clarke, Marketing Manager, Stanford

Software Corp. (800) 459-1511 or write to #104-4715 Ringway, Burnaby, B.C. Canada V5H 4M3.

Are We There Yet?

In what can only be described as a giant move, the Fraser Valley Credit Union, a \$100 million, 30,000-member financial institution (one of the two largest Credit Unions in B.C.) has selected three entire divisions of over one million transaction records to a network of local PCs.

According to John Clarkworth, Fraser Valley's Chief Executive Officer, the system, called the Project Banking Solution, was selected because of its

unique ability to enhance customer service. Expected to allow the Credit Union better control over its own database and customer records, the system also includes an integrated G/L package. Using a Client/Server architecture distributed network, the system is said to allow users virtually instant access to account records.

The system of 140 workstations runs completely on IBM-AT compatibles and microcomputers, with a 386-based server acting as the host system. Data is stored on large hard drives of 100 megabytes each, and is backed up (often, we hope) on magnetic-optical disk drives.

Contact: Rob Murray, Communi-

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for 10, a PC version of the visualization software is available for \$399 for five users. Current users can upgrade for \$79 for seven software, or \$117 for ten workstation software. Contact: Microsoft, 104-882-8080.

Canon's Bubble-Jet Printer For The Mac

TOKYO, JAPAN, JAN 10 (NH)—Tokyo-based office equipment maker Canon will supply its latest "bubble-jet" printer for Apple's Macintosh computer. The CM4000 is expected to be officially released this month.

Canon's bubble-jet printer for the Macintosh will be a modified version of the company's notebook-type printer designated "B412" and is expected to be equipped with unique heat technology. The print quality, therefore, is expected to be nearly as good as that of the LaserWriter II 800X. The list price is expected to be less than 100,000 yen (\$750).

The bubble-jet printer was improved version of an eight-jet printer Canon has already developed and has been marketing a bubble-jet printer for Japanese personal computers such as the NEC PC-9801, the Toshiba T1100 and the IPSC05 PC-9801.

Canon has been the supplier of Macintosh laser printers to Apple Computer since an OEM basis. Contact: Apple Japan, 03-5324-7000.

Apple To Add Electronics Stores To Retail Mix
SAN FRANCISCO, CALIFORNIA,

JAN 11 (NH)—Apple will try to add consumer electronics stores to its mix of distribution channels, said Robert Farber, president of Apple USA.

Outdoing Apple's U.S. vendor and support strategies in expansion and primary sales have been software MacWorld Expo. Farber noted that the pure power of Macintosh have sold more in the first quarter since their introduction than the Macintosh Plus did in its first half year.

To address the newly different markets into which the Mac is selling, Farber said, Apple USA will support their distribution chain through the lower, high-end market areas with minimal support, computer stores selling into small and large businesses, and highly value-added resellers providing custom enterprise mail consulting.

He denigrated the high-volume stores as electronics and warehouse type operations. He maintained, however, that those stores would still be required to provide service, if only minimal support.

"We're really taking liking care of the hardware," Farber said, providing consultation and repair service. His contracted service to support, which he characterized as providing software and operations assistance. Manufacturers, Farber said, would have no successful means of "on-site support," meaning sales on setup and initial use by using high-quality documentation and a new training disk included with every system.

Apple's quest for sales in the new marketplace is a sign of the market that has been difficult for other computer manufacturers to crack. PC sales manufacturers sell in the West and

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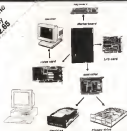
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Charts Software To Bundle Clearing Apps

MOUNTAIN VIEW, CALIFORNIA, JAN 7 (ENR)—The software subsidiary of Apple Computer is launching the Chartworks business clearing program, with copies of MacDraw II and MacDraw III. The promotion will continue through March 31, Chartworks said.

Chartworks comes retail price of \$125, and is published by Alden Systems, Pleasantville, New York. The sales lets users create and manipulate charts within a word processing or drawing application.

Chart and only selected authorized dealers are participating in the promotion. Two-partnering dealers can be found by calling Chart at 800-724-6277.

Alden Systems is located by Ken Alden, former president of Macintosh Graphics, the company that wrote Ready, Set, Go, now published by Lotus. The company also sells GnuDraw, a utility that lets users open files created by applications they don't own. Contact: Ken, 408/687-7000, Alden Systems, 800-332-5127.

NoRad Intra Radiation Shield For Mac Classic

SAN FERNANDO, CALIFORNIA, JAN 7 (ENR)—NoRad Corporation has introduced a NoRad Shield for the Macintosh Classic. The Model 2504P is a plastic unit a flexible frame to match the color and form shape of the Mac Classic.

NoRad Shields have been tested independently and meet US Military Specifications. Of several products claiming to shield computer electronics, shields have been confirmed as the most effective product blocking radio leakage to avoid interfering with emergency response. The NoRad Shield is used to provide from 99.999% to 99.999% attenuation including better than 99.999% of virtually all radio H-field (electric), including ELF and VLF, and better than 50 percent of the H-field (magnetic) above 50 kHz form.

In making the maximum amount, Bruce Sparks, NoRad director of marketing noted that Mac users represent a strong customer base for his company. The immediate popularity of the Mac Classic led NoRad to develop this shield as quickly as possible, he said.

Users can avoid this shield by means of Volcano radio shield kit, but he is included in the answer book. Suggested retail price for the Model 2504P is \$225. The NoRad SuperShield for 386-class computers is priced at \$249. NoRad are available immediately. Contact: NoRad, 818-353-6600.

Apple Earns \$150.5 Million In First Quarter

CUPERTINO, CALIFORNIA, JAN 11 (ENR)—Apple Computer says last quarter rose 12 percent for its first fiscal year 1991 ended Dec. 31, 1990 compared to the same quarter last year. Earnings are up 37 percent from the first quarter of the prior year.

John Sculley, chairman and chief executive officer, attributes the figures to strong product demand. "The new prod-

ucts we introduced this past quarter—the Macintosh Classic, Macintosh IIfx, and the Macintosh IIfx—have been extremely well-received. It is an indication of the market's continued interest in the new products we introduced this past quarter from the groupings level.

Net revenues for the quarter were \$1,406 million, compared to \$1,267 billion in the prior-year period. International revenues accounted for 46 percent of total revenues during the quarter, compared to 50 percent in the first quarter of

last 1990. Apple's U.S. dollar gain Apple greater opportunity to offer its new products structures plus position itself in international markets, the company said. Contact: Apple, 408/794-2200.

Canadian News

SHL Systemhouse

Chairman Steps Down

OTTAWA, ONTARIO, JAN 11 (ENR)—Richard Bryden has resigned as chair-

man and chief executive officer of SHL Systemhouse, at the request of the company's board of directors. Alexander of the system integration firm, Bryden will leave May 31, as soon as a replacement is found, he said.

David Peterson, vice president for the Systemhouse board of directors, said the board believed Bryden had to go to restore investor confidence in the company. A major factor, he said, was the financial troubles of Bankers Capital, a building company founded by Bryden.

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Alberta Govt. To Buy

Cellular Phone Company
EDMONTON, ALBERTA, JAN 4 (UPI)—Telus, the telecommunications company of the provincial government of Alberta recently sold to the public, will sell its manufacturing cellular telephone manufacturing subsidiary back to the province. Telus has been turned to option to sell the company following the collapse of a deal to sell it to a half-Asian firm in the company to the German electronics firm Robert Bosch.

The province will pay Telus C\$150 million for Novatel. Betty McLennan, manager of mobile relations at Telus, said that figure represents Telus' C\$150-million investment in Novatel, plus a C\$150-million guarantee that the company would have made on the Bosch deal, and it goes through, less C\$14.5 million in adjustments and C\$20 million that has been made conditional on Novatel's performance over the next two years.

Telus will manage the mobile cellular telephone equipment for the next two years. In addition to payment for its services, Telus will get 18 percent of Novatel's net operating income over a period, if the company makes a profit. Betty McLennan met James McDonald, deputy chairman managing director of Novatel, weekly conversations on Novatel's financial prospects.

Last fall, when recording Novatel's forecast of a C\$150-million profit could not be achieved, the Alberta government guaranteed it would buy Novatel from Telus if no other deal was closed. Press reports have described a proposed C\$400-million loss for the second half of 1990. But McDonald told Newsday that figure came neither from Novatel nor from Telus. At the end of November, Bosch pulled out of its planned purchase of 50 percent of Novatel, saying it had decided the deal would not meet its objectives.

Commenting on reports the Alberta government said to sell Novatel to private interests, McLennan said informed discussions are on-going with several parties interested in buying it. Novatel continues to believe it needs a private-sector partner, he said. Contact: Telus, 403-405-4780, Novatel, 403-205-4000.

Orchard Adds To Financial Software

VANCOUVER, BRITISH COLUMBIA, JAN 17 (UPI)—Orchard Software, based here, has added two packages to its financial software lineup. The new Professional Accounting, Inventory, Licensing packages support Canada's new Goods and Services Tax, and Lee Reuther, Orchard's marketing manager.

Because the software was developed in the United Kingdom, Reuther told Newsday, support of value-added taxes was already there. However, Orchard has extended it to support as easy as most CSE codes and some provincial sales taxes. "What is a lot of the companies we find with are multi-national," he said.

Orchard's Professional Accounting is a free-form software module that works with the company's Accounts Receivable software. It sells for C\$195.

The Inventory/Licensing package combines the features of the Professional Accounting software with inventory management. The software allows up to 50 user-defined fields as well as modular subroutines and supports multi-warehousing, defined inventory categories, and pricing details. It sells for C\$495. Reuther said.

Contact: Orchard Software, 404-556-7368.

Esael Opens

Offices In Canada

WOBURN, MASSACHUSETTS, JAN

17 (UPI)—Esael, the maker of graphics application software development tools, is opening new offices in Toronto and Atlanta.

A new Eastern Canada office—Esael's first foreign presence in Canada—will be located in Toronto, Ontario.

Esael's new South Central regional office in Atlanta will cover Alabama, Arizona, Florida, Georgia, Louisiana, Mississippi, South Carolina, and Texas.

Both offices will be operated by March, 1991, Esael said. The company currently has offices in the New York, Chicago, and Los Angeles areas. Contact: Esael, 617-935-6440.

Software Firms Join Toronto Stock Index

TORONTO, ONTARIO, JAN 8 (UPI)—In the annual review of its most important stock indices, the Toronto Stock Exchange has added three computer software companies to the list of 300 active firms making up the TSE 300 Composite Index. The newcomers are Cognex, an Ottawa maker of application development software, Genet, producer of the GoodDraw graphics software, and Interim Information Technologies, a Calgary, Alberta firm that develops software for petroleum and insurance com-



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plans.

The solutions were part of a reworking that saw 18 companies cut or drop the entire. Nine of those deleted were in the computer industry, although Bell Development, a subsidiary of BCL, which owns Northern Telecom, Bell Canada, and Bell-Northern Research, was one of those cut. Northern Telecom remains the largest high-tech company on the TSE 300. The companies dropped also included Computex Corp., which in the years recently due to the heavy financial losses of department stores it came in the United States.

The list of 25 companies added to the index also included Rogers Communications, which is part owner of United Communications, the company whose application to provide computer long-distance telephone service was denied in a now before the federal regulators. Rogers also owns Comco, a national cellular telephone service provider.

Major financial manager of the index sectors on the TSE and 30 companies also not selected for the index by a complex process involving the stock's value, trading volume, and the number of shares actively traded outside of large financial firms. Companies must also be incorporated in Canada and have traded on the exchange for a year to be included, the pool.

Energy and about 10 high-tech industry companies are currently included on the TSE 300 index. The exchange also includes a specialized high-tech industry index. Funds and the index can respond on any trends mentioned by the board through the makeup of the index. Contact: Toronto Stock Exchange, 416-593-4278.

IBM Alumnus Is New Boss

At Microsoft Canada

MONTREAL, ONTARIO, JAN 11 (NS) — Microsoft Canada has a new general manager — again. Paul Clegg, formerly vice-president for programming at IBM Canada, is taking over from Pary Soudouki, who after only nine months as the job is returning to the United States to accept a promotion on which the company has released no further detail.

A spokeswoman for Microsoft said Soudouki's change was a return to Microsoft's policy of filling senior staff positions with graduates of the company's own where subsidiaries are based. Soudouki, an American, was brought in from Microsoft's firm last year to replace Montreal's Timmy Clegg of Canada, a graduate of the University of Waterloo at Waterloo, Ontario, and has worked for IBM Canada for 24 years. His latest job was in branch manager, manufacturing and process, at IBM Canada in Toronto. Contact: Microsoft Canada, 416-564-0434. Contact: Marketing Network for Microsoft, 416-564-4484.

Waterloo Microsystems Becomes Hayes Canada

WATERLOO, ONTARIO, JAN 8 (NS) — Hayes Microcomputer Products has fired all its and is the former headquarters of Waterloo Microsystems here and changed the name to the office to Hayes Canada. Hayes acquired the technology, operating system development last year.

Steven O'Brien, a spokesman for Hayes, told Neustadt that former em-

ployees at the Waterloo office "now work for Hayes." The acquisition brought Hayes considerably technical expertise, shared as well as a much-needed boost in the modern market's Canadian presence. Contact: Hayes, 416-444-0791.

What To Provide Computer-Based Training To Air Canada

OREM, UTAH, JAN 17 (NS) — West Systems Inc. announced that its wholly owned subsidiary, West Canada, has agreed a \$741,000 agreement with Air Canada to provide computer-based training (CBT) for flight and maintenance crews of Boeing and Airbus aircraft.

The hardware and software will be installed at Air Canada's main training facilities in Montreal and Toronto, with additional installations in Vancouver, and Winnipeg. Each installation will consist of a West 486-based PC running software which integrates animation, interactive video and graphics software. The largest installation in Montreal and Toronto will have up to 30-6000 4000 student workstations on a local network. The program replaces the traditional classroom lecture and slide presentation and will be used to provide classroom training for qualified pilots and mechanics of the new aircraft.

West spokesperson Michael Hantz told Neustadt that this is the first time that software has integrated courseware from different software manufacturers on the same platform. Hantz says that West Systems and West Canada, outside revenues and the new workstations themselves, all contributed by a West management system.

A third-party system will be used at London, and Air Canada will have a stand-alone terminal unit for remote training at other sites. West officials say Air Canada is planning to provide computer-based training for all flight and maintenance personnel the structure of Boeing and Airbus aircraft. Contact: 800-434-4341.

Midwest President Resigns

OTTAWA, ONTARIO, JAN 11 (NS) — John Jarvis has resigned president and chief executive of Midwest Anthony Giffiths, chairman of the telecommunications services company, which will assume back title.

A brief statement from Midwest and Jarvis has compared "to pursue other business interests." Jarvis plans to visit in July, 1991, leaving Jarvis as chief executive of the company and telecommunications group of PA, a management and technology consulting firm, in Ottawa.

A year earlier, British Telecom had bought 100 percent of Midwest. After the beginning of 1990, the telephone study announced it wanted to sell that unit, but as far as Jarvis has been found, he continued to work for British Telecom, a Canadian telecommunications firm, ready to bid on the company, but neither company would confirm this.

Midwest moved back into the West after three years of losses under after Jarvis' arrival. However, in the 19 months ended September 1990, the company reported a loss of \$87.1 million. Company spokeswoman Rosalyn Phipps said that those losses to increased costs resulting from a major marketing push. Giffiths has been with Midwest since 1985. Contact: Mid, 416-564-1117.

page address was that shown due to its very pro-Baker position. The E&EJ personnel also were not particularly fond of reporters in Lemayville due to "bad" (Baker crowd) information misrepresentation. "They will be replaced by retired Communist party officials, Rickie Blaine reports.

Stories Carried By Other Media This Month

WASHINGTON, D.C., JAN. 11 (UPI)—Roundup in a brief look at some computer stories carried in other publications this past month.

Sunday's *New York Times* (NYT) carried

an article on the trend in slowing production of computers with very little or no software, also known as "underdevelopment." The companies involved state that this is not for health, or safety concerns but rather a collection of market forces.

This issue, NYT editors reported that Intel's Peripheral, San Jose, Calif., has developed and is about to shipping a prototype "Microbus" that allows which sends and receives data to both super floppy and conventional disks, other manufacturers starting to produce topicals are Intel Technology, also in San Jose, and Japan's NEC and Toshiba. (Peripherals.com) This October issue

of *Byte* contained reviews of all of these products.

Computer *Graphic* Plus dated January 7 contained a two-page story reporting that there are 125,000 laptop computers in the IRS and Environmental Protection Agency will help boost that number to about 400,000 by the end of 1990. A quote inside feature covers the use of laptop systems in the government.

The January 16th *Source* News carries a fascinating article about Cornell University researchers also creating instructions on microchipboard surfaces already covered by neural analogs. Such research could eventually lead to new

higher-density data storage systems.

The *Wall Street Journal* (WSJ) reported on Monday, January 5, that there are estimated at U.S. technology companies across and past from Japan but also from Taiwan, Singapore, and South Korea.

Updating one item in last week's Roundup, the WSJ for Wednesday, December 8, announced Microsoft's expected second-quarter earnings of \$100.5 million, or \$4.00 per share, in Cambridge, Mass. Income of \$100 million was reported, a figure already announced by Harvard International's year-over-year review, a widely expected to last more market share.

Amendment to Wednesday's WSJ, Claps & Technology, San Jose, Calif., has developed a multiple-product, PC Video, that lets companies share their video-style images.

Thursday's WSJ also carried an article on the new trend of personal computer administration—strong points and performance. Among the companies making up their numbers Advanced Logic Research, IBM, and Sun Microsystems.

The January 7 issue of *Computerworld* carried a story from the U.S. Department of Commerce's Strategic Planning and Development in the computer industry, despite an overall slowdown in the economy. According to author Gary Aronson, Commerce has projected that hardware sales will climb 5.6 percent, chip sales will jump nearly 9 percent, and software revenues will increase 25 percent.

Sony's CD Master-Disc System, a desktop-type hard drive system that writes data to a CD-ROM compatible disc, has won CD-ROM Professional Magazine's 1980 Product Development Product Award.

This week's *Computerworld* has a story on problems the Army's information services encountered in having meeting engagements in Israeli Arabia—the story is dated before the start of the war.

Computer World also has the January 14 cover the results of a major survey in the IBM computer market, showing that 5000-based systems make up about 40 percent of the installed base in three languages, with nearly 2.5 million/1000/4000-based systems still in use. The survey also indicated that Fortune 1000 companies plan to make a surprisingly low 0.1 percent of their purchases from the products of last year's 1000-based companies.

The WSJ reported on Wednesday January 14, that Compaq Corp.'s latest mainframe designed for the 68000 family (L2E 386/25) laptop computer, listed at \$4,000, due to shortage of key parts.

Thursday's Journal reported on the shipment of 350 new boxes by Wang Laboratories, Lowell, Mass. to Hong Kong, also by Wang's "express" agreement, to handle Southwestern California-based Wang Computer Systems' new computer design.

Mentioned in Thursday's WSJ were last month on both the *Fortune* magazine posted much from traditional companies to mainly parallel computers, and software which automates scheduling tasks.

Friday's Journal reported shortages of Intel's 68000SX processor chips, which are offering computer buyers to market the latest notebook computers.

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ended December 31, 1990. Profit increased to \$418.9 million over \$182.7 a year ago.

Sales are \$1.04 billion for the period. Adjusted sales total at \$300 billion, up from \$212 billion from the previous year. Net income is up 66 percent from a year ago to \$450.5 million.

The strong growth is attributed to Intel's line of 286- and 486 microprocessors, which are being gobbled up by micro manufacturers worldwide as second-rate PCs are sold.

Starline Ships

350 Wordstar Workalike

PORT HADLOCK, WASHINGTON, JAN 18 (CN) —Starline Software has announced it is shipping version 1.0 of its Galaxy file, a commercial version of Microsoft's Galaxy document word processor. Galaxy's main claim to fame has been that it forces the option to drive the package using Wordstar commands as well as its own.

The much-contested tug with the Wordstar package was that, while it included the facility of having two files open at once at once, the maximum size of any file could only be 100K.

Galaxy file 1.0 appears to have put past the 100K file size limit while at the same time offering Wordstar command compatibility, plus a host of other features including the ability of having two file windows open on systems at the same time. Features of the package include a 70,000 word spell-checker, multiple document printing with classmate or on terminal command systems.

Galaxy file 1.0 requires a 700 to a single floppy drive plus at least 100K of available memory. The package is available for \$40 plus post handling good for shipping anywhere in the world. Contact, Starline Software, 206/407-4104.

Informix Posts Loss, Will Lay Off Staff

MENLO PARK, CALIFORNIA, JAN 18 (CN) — Informix Corporation reports to lose \$4 million for its fourth quarter, against a loss for the year. The software company, famous for its Wang spreadsheets for various platforms, will also lay off 25% of its 1,500 employees.

Informix says the loss includes research pay and benefits from the layoff, and the write-off of previously capitalised software development projects.

Lotus Marketplace Slammed By Computer Pro Group

WASHINGTON, D.C., JAN 18 (CN) — Computer Professionals for Social Responsibility (CPSR) has announced that it will oppose the release of Lotus Marketplace, a CD-ROM based marketing information database for the Apple Macintosh. Marketplace contains personal information on consumers throughout the United States.

In written correspondence to Marketplace, CPSR President Eric Roberts said, "From a privacy viewpoint, Marketplace simply fails. As computer professionals, we have a responsibility to limit the public access of this information. We hope that Lotus will reconsider their plans and decide not to release Marketplace."

Roberts added, "These leaders of work-to-do on the privacy front, but opposing

Marketplace is a good first step."

CPSR's statement states that privacy experts feel that marketing information on individuals with out first consulting them violates the Code of Fair Information Practices. The Code, developed in 1973 by a government study committee chaired by Mike Ware, a computer security expert who now heads the federal government's Computer Security and Privacy Advisory Board, places a responsibility on data holders to ensure that individuals in software, computer, and related, companies that companies such as Lotus provide individuals with access to personal information also an opportunity to review the records and to make

corrections. The Code prohibits transferring information without first obtaining consent.

Although the CPSR press release stated a telephone meeting for Lotus' Justice Berwick is a press contact to be called to discuss the CPSR statement, Mr. Berwick told Marketplace that she had not been contacted by CPSR concerning a statement and was not aware of its content. He said that Lotus would have to obtain a copy of the CPSR release and answer it before responding. Contact CPSR, 202-775-1566.

Sony To Set Up U.S. Software Firm

NEW YORK, NEW YORK, JAN 18 (CN) —Sony Corporation has announced that, on January 15th, it will form Sony Software Corporation, a new U.S.-based company which will encompass and coordinate Sony's present and future software activities under one name.

Yoshio Ohgisi, president and chief executive of Sony Corporation, will be chairman of Sony Software while Michael P. Wolford, a member of the board of directors of Sony Corporation, will be president of Sony Software.

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PC Magazine (Nov. '90): "You owe it to yourself to understand GEOS and the choices it offers."

InfoWorld (Nov. '90): "GEOS appears to be superior to Windows in everything but size, stability, and the number of available applications."

Computer Paper (Jan '91): "I could not find a single bug in PCGEOS."

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Added features also include an "Object" command for programming files with a keyboard, viewing the arbitrary standard I/O format, and directory comparisons of two directories even if they are not on the same drive.

KlugeGold comes a suggested retail price of \$149 with upgrades in earlier versions available for \$35. It comes on both 2.5 and 3.5 inch diskettes and is designed to run on any PC/XT/AT/PS2 or compatible system running DOS 3.1 or later with at least 256K RAM. Contact: Kluze, 602-441-0004.

Spinnaker Buys PFS Product Line

SEASIDE VIEW, CALIFORNIA, JAN 17 (SR) — Software Publishing Corp. has sold its PFS product line to Spinnaker Industries in Cambridge, MA. Software Publishing Corp. report will receive 1,800,000 shares in exchange for 10 percent of Spinnaker's outstanding common stock, after the transaction, and options on sales on PFS product.

The products included in the purchase are PFS:File, PFS:Note, PFS:Form, PFS:Project, and PFS:Key Stack. The agreement also allows Spinnaker Software to license PFS:File Desktop.

The move marks a difficult road away from corporate computing for Software Publishing, according to Fred Gibson, president and CEO. "The sale of our PFS line now allows the company to direct all of its resources to developing products for the corporate market, for use as a packaged solution."

"Our goal is to help the business grow."

Additional access and payment information enabling them to make better decisions, better. At the same time, no future PFS companies will be influenced by Spinnaker Software, which understands their unique product will support needs."

Spinnaker Software is at a meeting a list of Windows 3.0 applications that will be marketed under the PFS brand. The first of the new products will be announced in the quarter.

As for the current group, Software Publishing Corp. will continue to support the PFS products in use until the end of several months. The employees who worked on the PFS products will be offered other positions within the company. corporate@spinnaker.com; Contact: PFC, 415, 315-6440/Spinnaker, 617, 404-1880.

A 68000 CPU Is An IBM

MANCHESTER, ENGLAND Japan is preparing to release the first of its kind of business personal computer into the Japanese market this spring. They include notebook-type PCs and home PCs.

These machines will be equipped with IBM's new data operating system called DOS/386, which will also be provided to the compatible machines. Prices of the new machines are expected to range between 150,000 yen (\$1,100) to 300,000 yen (\$2,200). Interestingly enough, the business PC will be jointly developed with Toshiba-based game system maker Sega. Interestingly, it will be a dual CPU machine, which will be equipped with a 68000 chip and an 80386 chip. According to the Nikkei Financial Computing magazine, the machine will be code named "Tera" and will look like the PS/2. The system will initially be released in

Japan in April.

Contact: IBM Japan, 03-3295-1111

Ashton-Tate Appeals Adobe Copyright Case

TORRANCE, CALIFORNIA, JAN 17 (SR) — The judge who ruled that Ashton-Tate violated Fox Software's copyright in the dBase programs has denied Ashton-Tate's motion for reconsideration of his order. Ashton-Tate says it will take the matter to a higher court — the Ninth Circuit Court of Appeals in San Francisco.

Judge Terry E. Haney said, however, that Ashton-Tate is only appealing for his order.

"While we were disappointed that Judge Haney did not appoint our motion for reconsideration, we are pleased that he ruled on our path for appeal. And the fact people maintain that this is not a final judgment," said William E. Lyons, Ashton-Tate president and chief executive officer.

He stressed that the dBase software remains protected outside the United States by the Berne Convention on copyright and in the U.S. by patent agreements. "It remains very confident that our position will ultimately prevail in the Court of Appeals," he said.

File Express 3.0 Released

RYLAND, WASHINGTON, JAN 18 (SR) — Empowerment Corporation has announced release of version 3.0 of its file database program File Express. The updated software will be available February 15, 1991. List price is \$99. File Express 3.0 runs on IBM and compatibles and requires only 16 MB of

random access memory (RAM) and ten high density floppy drives. Furthermore, the program is written in C, it has robust backup capabilities, and will communicate over two different network protocols, with a maximum of 200 fields per record. Each record can contain up to 4000 characters.

Also included are mathematical calculations with accuracy up to 14 digits, and calculated fields are supported. Reports can be sorted on up to 10 fields simultaneously, with three levels of subtotals. The program has the ability to search and replace, to search and delete records, as well as automatically search for duplicate records within a database or between two separate databases. Field formats may be changed with little effort or removed after the data has been entered, much like the popular Qdase program from Syntex.

Other features include query and reporting facilities, with reports being generated in columnar or tabular format. The user can select individual records or record ranges for output.

All printing including mailing labels can be in regular or condensed mode. File Express 3.0 supports network file locking, and can exchange data between File Express and Lotus dBaseIII or Word Perfect databases. It is not copy protected and has comprehensive help screens for new or occasional users.

File Express can be ordered directly from Empowerment Corporation by calling 800/753-FILE (1425). Visa and MC accepted. The purchase price includes phone support, a newsletter and automatic notifications of updates. Letters not sent are presently 16,000 registered users since the program's introduction in

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in July 1984.

The most significant change in the latest version is in internal capacity. The first releases could handle about 10,000 records. Later we said that "the interface appears very much closer to the user." It is much like using a car's ECU, the learning curve is very short, and at a very popular rate people who could already interface ECU that it is easy to learn and use." Com-SCI, Exponentia Marketing, 205-568-0054.

Telecom

Standards A Problem

In E-Mail Transfers

CAMBRIDGE, MASS. (JAN 4) (ENR)—For electronic mail readers, 1991 will come struggling with two different standards—the MHS-based handling standard and the X.400 message-passing standard. Grant Harris, president of Worldframe, which makes MHS software, used to be someone such Prologix's the former software company the performed any of handling external mail systems, while the latter can be used to handle such systems to the outside world.

MHS has many standards, Harris says, including X.400 protocols, Address Table, and Worldframe, which distributes it with MHSware. Worldframe's products add backends to MHS systems by letting them do the heavy lifting, automatically forward messages to all addresses of specific companies, based on a table of addresses. The company is also maintaining a new version of its Mailbox program, which lets users attach entire files to messages which can open both MHS, X.400 commands or the opening of utility appli-

cations programs.

X.400, in contrast, "is held out in the market," she says, as a "very strong message," says Harris. "It's not a standard, it's being defined." The biggest problem is determining the standards on a message going to another system. That compound to be that with under X.400 with an authorized standard called X.400.

Unfortunately, "There are many different message systems or e-mail. Internet has its own long running system. MHS is complex—it's a standard plus its own system. It's easier to handle or even to integrate." The result is that, while X.400 is an accepted standard, it's seldom used. "If I used an e-mail system I have to have a link to X.400, but I don't know of anyone using it," Harris says.

Harris told Newsweek's recent data on X.400 he's held indicate the problem is not yet solved. "Many protocol systems have been developed on MHS and a uniform addressing scheme you still have a problem—plus other need a looking table or you have to have an address in a different system."

He concludes, "My experience is with out X.400, then X.400 won't provide more than a physical standard. Without an addressing standard you can't move data. And they're saying they're a year from writing desktop software and it's 3-4 years from X.400 products." Contact Worldframe, 617-471-4770.

Plain-Paper Faxes

Via HP Laser Printers

PLANO, TEXAS, JAN 4 (ENR)—Toll Free Systems has introduced its Fax-Mate, an external, independent device that routes and prints faxes on a laser

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WordPerfect Level I	Feb 4, 11, 21	Mar 4, 12, 18
WordPerfect Level II	Feb 7, 27	Mar 5, 26
WordPerfect Database	Feb 18	Mar 23
MSL Level I	Feb 1, 10	Mar 1, 20
MSL Advanced	Feb 28	Mar 14
Microsoft Word 5 Level I	Feb 5	Mar 18
Microsoft Word 5 Level II	Feb 26	Mar 18
Microsoft Advantage	Feb 20	Mar 21
Office 5 Level I	Feb 12	Mar 15
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Harvard Graphics	Feb 5	Mar 7
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printer. The device connects directly to a Hewlett-Packard 11, HP-110 or 113 (or compatible) laser printer through the parallel port. A computer is then connected to the device so that both can use the laser printer. A fax module in this card can also be connected for transmission of faxes.

For \$349, the printer provides automatic sending which allows for legal, bill, and all other large-format to be printed on one 8 1/2 x 11-inch page, the company says. It can store up to 34 pages in an internal 512K buffer when the printer is busy or targeted off.

The list price is \$509, and the product is available now directly from the manufacturer. Call 413/453-1880 for more information.

Hayes Wins A Round In Patent Fight

SAN FRANCISCO, CALIFORNIA, JAN 8 (UPI)—Hayes Microcomputer Products announced a partial victory in its fight to invalidate its major modem patent, as Protonics Products agreed to a settlement rather than sue due to go to

trial.

Protonics decided to recognize the Modem with Improved Range Software patent owned to Hayes in 1981, number 4,248,593, and it will pay license fees to Hayes in connection with the continuation of its settlement. Tied on the same counts against its other defendants in the case, but the settlement with Hayes and US Robotics then and proprietary products at that speed, called the V Series and HST Series respectively. Contact Hayes, 404-440-4701.

The Gulf War

Gulf War Is A Satellite War

Editorial by R. Zucker, HENRIK AUSTRALIA, JAN 18 (UPI)—The Gulf War of '90 may not be remembered for that fact, but it is "The war that happened by satellite." This satellite involved one of two types, military, but intelligence was

current, and commercial, for the unprecedented TV coverage of the war.

It was the TV coverage which facilitated the war. Watching live in Australia, a strange thing happened: there are live TV networks in Australia, and live of these closer to war conditions are coverage, each taking a different US network feed. Anyone coming on Australian TV could be amazed by watching which country they were in.

In addition, the live coverage had been reported in the news, such as Saudi Arabia, Baghdad, Jordan, Israel and so on, and each network regularly ran live satellite feeds to their reporters. Amazing that many other countries (especially Europe) were doing the same thing, there was been hundreds of live satellite feeds every hour, right through the first 12 hours or so of the war.

Another interesting feature of the TV war (and only a TV war would be used to start at evening news time in the US) was the "backbone" effect caused by the network's coverage (including live feeds) such as in a digital video system where a small amount of live feed into the

system, comes out of the speaker and then back into the microphone - going around getting more distorted and louder and going.

Throughout the first half-hour of coverage, it became obvious that the main TV news services (and especially CNN) were being monitored in the best source of news. For instance, people in Saudi Arabia and other parts of the Middle East were monitoring the war from US TV networks. As a result, it was known that coverage on one service was heard by millions in the Gulf, quickly became a local network, was fed to another network in news, broadcast, and then became part of the live network, where it had been just a connected 15 minutes earlier.

So to the person to view the live news for this phenomenon.

Unix

Maple V Computer Algebra

WATERLOO, ONTARIO, JAN 7 (UPI)—Waterloo Maple Software, based here, has begun shipping a new version

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of Maple, as computer-based algorithm systems. Maple V is available initially on Sun-3 and UNIX-based workstations, most Digital Equipment Corporation runtimes (VMS) and Unix systems from MIPS Computer Systems, and Joint Gene, marketing managers.

Costs include computer hardware release. Maple V on the Apple Macintosh and Intel-based systems in the first quarter of 1991, and for all other systems that run personal versions of Maple later in the year. Maple runs on an assortment of hardware from microcomputers to supercomputers, also told Newkirk.

Maple runs on a variety of Unix-based hardware, according to the company. Waterloo Maple chose the Sun platform for the first release of Maple V because "to address one of Maple's largest customer bases," said Ron Newkirk, chief executive of the company, an unnamed statement.

Maple V for Sun with the 68030-486, with equivalent pricing on other runtimes on most hardware. That's from average prices from US\$400 to US\$2,000, depending on hardware supported. The license and academic discounts are available. Contact Waterloo Maple Software 1-800-743-1373.

AT&T Buys More Sun Stock

MOUNTAIN VIEW, CAL., JAN 8 (AP)—Sun Microsystems says it will sell AT&T another 441,750 shares of newly issued stock, but still controlling a non-voting 49.99 percent of AT&T's common stock. AT&T is the company's largest shareholder in Sun's Mountain View, California, headquarters, and that the agreement for AT&T to buy is worth a 10 percent of Sun (14.6 million shares) in newly issued stock directly from the company, plus other securities on the open market. Maps said he believed that AT&T has bought most of the stock to which it is entitled from the market. The deal is the largest of the deal in the last in which AT&T is involved.

Maple expects the sale to be consummated within 30 days. The price will be based on the average closing price of Sun stock for the 30 trading days ending January 3, plus a 25 percent premium.

Despite AT&T's large holding in Sun, it doesn't have a seat on the company's board of directors. AT&T gave up control when it became apparent that Sun and AT&T would be competing in the hardware market and not just cooperating on their software. Contact Sun Microsystems, 410-534-4100.

Windows

With 3.11 E 3.1

CAMBRIDGE, MASS, JAN 8 (AP)—In a dual performance of Microsoft's Windows, Lotus Development has announced it will give a free Windows-based spreadsheet to buyers of Lotus 1-2-3 3.1, and has generated an upgrade price that includes buyers of 1-2-3 3.1. Microsoft said expected Windows version of 3.11.

Lotus will give a free copy of Ami Pro/Professional, the Windows word processing software from recently acquired Spinnaker, to buyers of 1-2-3 Release 3.1. Lotus acquired Spinnaker of Atlanta, in November for about US\$45 million. The offer is valid in the United States

and Canada on 1-2-3 3.1 purchases and upgrades between January 8 and April 30. The suggested retail price for 1-2-3 Release 3.1 is US\$249 or US\$179, with upgrades priced at US\$159 or US\$105. Ami Pro carries a suggested retail price of US\$495 or US\$399.

To receive these free Ami Pro, must 1-2-3 3.1 buyers will have to send their original sales receipts to Lotus as proof of purchase, along with an Ami Pro coupon available through local national advertising. From Lotus Development, deadline on by calling Lotus (811-8535, TRAD-UP on the United States) or at 1-800-440-4500 in Canada. Users must include a US\$15 US (US\$25 shipping and

handling charge of outside the United States).

Lotus also announced a Technology Guarantee upgrade program under which new 1-2-3 Release 3.1 buyers can upgrade to a future version of 1-2-3 for US\$49 in the United States or US\$59 in Canada.

To take advantage of the Technology Guarantee program, customers purchase or upgrade to 1-2-3 Release 3.1 on or after Jan. 8, 1991.

Contact to Lotus Development, 417-405-1393.



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Fax Software For Windows

TORONTO, ONTARIO (JAN 17) (MR) — Software developer Delrina Technologies has added its Windows software to its Microsoft Windows 3.0 suite and offers directly from within any Windows applications, including Delrina's own Perform Pro forms processor.

The software works with any PC fax card using the Sierra Semiconductor Softfaxchip set. That means users should find the fax card on the market, Delrina spokesman Josef Zencovetz told *Newsworld*. Among the cards the software supports are those from Zoom Telephones, Cardinal Technology,

Cyrix, Xerox, VersaTel, Proforma, Prodata Peripherals and CPT Inc.

Windows users can send faxes by selecting the print command from the menu or a Windows 3.0 application. Output data and faxes are switched to the resolution via Group III facsimile, Delrina said.

The suggested retail price of the software is US\$49. Zencovetz said Delrina is working on deals to bundle the software with fax cards from various manufacturers, as well as with a through major software distributors.

Delrina also announced selected time-price promotions on Perform Pro 2.1, its

entry-level forms software. Effective January 1, the price of Perform 2.1 is reduced to US\$149. Zencovetz said the promotion is widely scheduled for six months, but might be extended. Response has been good so far, he said. Contact: Delrina Technologies, 415-641-5678.

Wordstar For Windows 3.0 Due

LONDON, ENGLAND, JAN 17 (MR) — Wordstar International has called a press conference for Tuesday, January 22. The company will launch versions of its Wordstar word processing package for the Microsoft Windows 3.0

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SPREADSHEETS

Spreadsheets

by Christine Barakat

Spreadsheets have traditionally been used to add up lots of numbers, calculate totals, and make equations. They are powerful tools if you know how to use them, and get far beyond simple number crunching.

Many of today's spreadsheet applications graphics capabilities of the machine to generate analogies. Wang (Borlas), Microsoft (Lotus) and (Excel) and Excel

(especially version 3.0, just released for Windows) both take this to the extreme. You need to draw a 3-D shaded bar graph and size it from above and below. You can "What to draw a 3-D pie chart with thousands of slices? This can

By combining the spreadsheet and graphics on the same screen, you can do things like have your monthly sales on one line, and a graph of that data right below it. With Windows capabilities, and what is it to possible to customize a spreadsheet to look like almost anything: a tax form, a calendar, a database, you name it. You can even build dialog boxes right into

spreadsheets so anyone can use it. With Lotus spreadsheet's Windows-based version of 4-2-3, and compares the two and putting their bets in the ring with products like Quattro and Quattro Pro, this race will have a lot of competition for years to come. Interestingly, Lotus recently won a lawsuit against Paperback Software for their Pro VP Planner spreadsheet's resemblance to 4-2-3. Whether it be price, if Microsoft eventually must Lotus for "look and feel" similarities to Excel, now that the two programs share Microsoft's Graph User Interface (G

Excel 3.0

Spreadsheet Heavyweight—
Worth The Wait!

by Denise Dwyer

In the left corner the second heavyweight champion of the spreadsheet world. Last Lotus had challenged from the right corner, the Mighty One, Microsoft.

Product: Excel 3.0

Publisher: Microsoft, One Microsoft Way, Redmond WA 98050-0000, 800/MS-INFO

System Requirements (PC Version): 286, 386SX/386 or 486-based PC compatible computer, must be capable of conventional memory. Microsoft Windows 3.0 or later (Macintosh and OS/2 versions available soon—contact Microsoft for details).

Price: \$49.95 (upgrade \$19)

Key Features:

- Tool bar provides quick access to commonly used functions and commands
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- 9-9-3 help and compatibility features



Even people who don't know spreadsheets from business have probably heard of Lotus 1-2-3. Rarely does a product redefine the terms of the computer world like it did: the PC market took in the early 80s (1983, to be exact). Excel is now—because PC users everywhere found 1-2-3 a truly useful tool for financial calculations, analysis and forecasting.

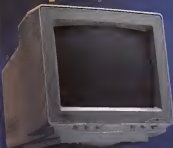
Although not the first computerized spreadsheet (VisiCalc, 1979, was that distinction), 1-2-3 dramatically improved on the powers of its predecessor, adding graphics and database functions to its VisiCalc-like spreadsheet functions.

Like its predecessor, 1-2-3 also opened an entire genre of business classes, the naturally all types of computers. The usual approach was to approximate the Lotus look and feel (which, in Paperback & Book, even one full year, sometimes leads to availability), and often 1-2-3-like aspect and report abilities.

Back in the top, 1985 came, the third major step forward in a (three-pronged) version of a new generation spreadsheet for the Mac called Excel, and compared to its (Mac) Excel (now obsolete) entry into this market. At last, the third Microsoft Excel entered up with since 1985 of the Mac spread-

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sheet market.

Just long after that (late '86 or so), Microsoft's Windows environment for the PC brought the first cut of a Windows-based Excel. Excel the Windows was intended for its time, because it required the same—and then only—IBM-based PC/AT.

From first to earliest incarnations, Excel was flawed ever. Little for casual use, more sophisticated graphics and spreadsheet-oriented display options. But still 100% tied to the hardware and parameters of spreadsheet users, retaining a too fixed or generic sales strategy for the success or failure of Excel was directly tied to that of Windows itself—in an

area 1 and 2, not exactly a money machine.

Each program has gone on the power and version number. Excel, Lotus 1-2-3 is at version 3.1 and Microsoft has released Excel 3.0 (New Microsoft), with the stunning popularity of Windows 3.0, has brought much of the idea of Excel and first to the realm of IBM-PC/AT. It is today set to replace itself in the PC world?

And The Winner Is...

Rather than keep you in suspense, I'll tell you now there is no clear winner. 1-2-3 is still ahead in spreadsheet publishing power and provides more facilities in compact and manage modular spread-

sheets (important for power users), but Excel has a far more usable spreadsheet interface and superior graphical object handling.

This probably means that Microsoft's best chance at eventual market dominance is from the ground up, starting with those people who will prize Excel for its ease-of-use. It is not any 1-2-3 users over, at the bottom. As we shall see, both strategies are consistent Excel 3.0's design.

More Easy, Please

To their credit, Microsoft has not just piled on more loads of modern features (although there are plenty) but has in-

stead taken the task of trying to simplify these and maximize spreadsheet tasks, thus considerably enhancing the program's ease-of-use.

Users of the current Excel version will notice several enhancements to the display, most notably Windows-3.0 standard font size across the top of the screen which is a more consistent and feature-rich than the standard 10-point font. Functions for calculating the sum of a column of numbers, adding column algebra, creating matrix graphs objects and more are available at the click of a button in the tool bar.

1-2-3-4

Excel makes the upgrade path for 1-2-3 users very easy, a thing less that the number and increases the Excel spreadsheet of 1-2-3 commands 3.0 can read 1-2-3 1983 files and screen.

Other supported formats include dBase III, and dBase III+ (Microsoft format), CompuLink and CSV (comma separated value) files, as well as files related with other versions of Excel.

It can also cross connect references to 1-2-3 Release 2.0 and Release 3 worksheets (although only in the first layer of a Release 3 document). These external references link easily like internal references between two Excel documents.

Q & R, Power Software's SQL database query utility is also included, for true relational database capabilities.

Macros & Outlining

Version 3.0 can macro-enable macros when the program is started and allow macros can also enable that make custom functions and commands available to users without giving them access to the macros sheet itself. Custom dialog boxes are also possible.

An outline function is available to automatically organize worksheet data in an up to seven hierarchical levels, allowing data to be indicated or divided to define relationships. Once constructed, details of an outline can be collapsed with a single mouse click to see the "Big Picture."

NewWave

Excel 3.0 takes advantage of various media available by IBM's NewWave operating environment, allowing Excel objects to be moved and linked to other sheets in other NewWave aware applications.

Solve This

Excel 3.0's decision trees of sophisticated goal-seeking capabilities, in the form of a built-in command, solve's operation more advanced utility program called Solver. The first, the Formula Goal Seek command, finds a value that returns a desired result on a formula. For example, you might use it if you wanted to find out how many units of a particular product you have to sell to push your total sales above 10,000 units.

The other, more complex, "what-if" analysis, Solver's Solver, provides more flexibility and power in specifying the constraints for the values you're seeking. An example given in the standard Excel documentation poses a situation where you'd like to find out what level of advertising spending across a four-quarter period would produce the optimum

CONTINUED ON PAGE 54

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SPREADSHEETS

Lotus 1-2-3 Release 3.1

by Steve Phillips
Overview

Lotus 1-2-3 Release 3.1 combines standard spreadsheet functions with printing, multiple layout modes, and drawing tools. An optional graphical interface is available for machines that can handle it.

Setup and Ease of Use

Lotus 1-2-3 modification is a single-screened installation program. The program installs the software and sets up the printer drivers and fonts. Lotus 1-2-3 comes with Intertex fonts, which are created in the act of installation. This automatic implementation allows users to have it all in one.

Release 3.1 still has the same interface as Release 1. Although the implementation is very clean and looks quite nice on a graphics display, it is similar when Lotus will update their user interface to the current standards.

Many computing has been added to the WYSIWYG interface and in a web color addition, but most users will find the WYSIWYG interface tedious. Menus completely should be added in the standard interface.

The WYSIWYG interface is so similar to a graphics display, it is similar when Lotus will update their user interface to the current standards. Many computing has been added to the WYSIWYG interface and in a web color addition, but most users will find the WYSIWYG interface tedious. Menus completely should be added in the standard interface.

Product: Lotus 1-2-3 Release 3.1
Advanced 3-D spreadsheet is an interactive graphical environment
Platform: Lotus Development Corporation, 35 Cambridge Parkway, Cambridge, MA 02142
System Requirements: IBM PC AT or Lotus certified compatible, hard disk with 5MB available, VGA, high-resolution CGA or Hercules graphics adapter for WYSIWYG display, 1MB of RAM, DOS 3.0 or higher
Price: \$275

Key Features

- Optional WYSIWYG interface
- Mouse support in the WYSIWYG interface
- Advanced file linking
- Live on-screen formatting
- Intertex fonts
- Graphics & drawing tools
- 3D technology
- Menus support
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graphics or document speed. *Quattro Pro* has a smaller RAM requirement than the new Lotus 1-2-3 [1].

Virtual memory management allows the programs to reorganize bits of code in and out of memory. This results in that you can use less than 540K. The new version of Lotus, in contrast, needs a minimum of 584K of extended memory.

Quattro Pro offers three types of calculation modes. In automatic mode, every time you enter a change in a spreadsheet, the spreadsheet recalculates. In manual mode, the spreadsheet only recalculates what you tell it to. The third mode of recalculating what you want the PC command to do so.

Finally, the program has built-in audit mode. With this setting, the spreadsheet will update between brackets. In this background mode, it is quite slow to update, but in order of the foreground window, updates are very fast, outstripping those of the new Lotus.

Most are similar among parts of the package, especially with the shared look across debugger.

Graphics Capabilities

People doing presentation graphics will appreciate the ability to import logos and standard clipart stored in GEM, EP or PCX files. The GEM format is more than mere raw import. Lotus Freelance (Pete and Harriet Graphics) notes:

Instead of making it a tedious clipart library, a GEM file can be copied from one spreadsheet to another. This copying automatically makes the reuse of standard clipart simple and fast.

Another add to those doing presentation is *Quattro Pro's* ability to install point-and-click graph buttons that allow links to other graphs or to macros. With these interactive tool boxes, one can install an spreadsheet and spreadsheet-to-spreadsheet calculation system.

These new techniques could be used to set up a slide sequence to underlie presentation notes later. Because the rollouts are so accessible, yet hidden behind a rather level of software.

On VGA systems, *Quattro Pro* supports up to 320-column displays.

The new version also includes an increased number of graph options including 3-D bar, line, and area graphs. They are based on pseudo 3-D graphs in which the data series are plotted behind one another and displayed in 3-D perspective.

Import/Export

Lotus users will find themselves right at home with *Quattro Pro*. There are three options for importing, the first I think is the one *Quattro Pro* has, but there can also choose a Lotusware approach in the old *Quattro Pro* Version 1.1 database.

File menu imports and exports into Lotus 1-2-3 Version 3.0 easily. Most file-linking commands are automatically converted to import, which saves manually converting the links across spreadsheets.

Goal Seeking

Lotus optimization has never been easy to set up in spreadsheets. The first spreadsheet to make the function relatively easy was Lotus 1-2-3 [2] with its Goal Seeking. *Quattro Pro* achieves a single problem-solving ability that when set up, will automatically find the values

SPREADSHEETS

SuperCalc 5

by George Slide & Steve McHale

Overview

SuperCalc 5 is a full featured Lotusware spreadsheet package that offers spreadsheet management, data analysis and visual presentation. It offers the standard calculation structure of columns, rows and cells, with an optional Lotus-style interface.

Setup and Ease of Use

SuperCalc 5 has a point and click interface, procedure as I have seen at many points. The instructions try to create a directory and copy all the distribution files to that directory.

If you follow these instructions literally you will end up with many files you don't want or need. If you are installing *SuperCalc 5* on a network, the procedure is very long and complicated with numerous manual changes to your DOS environment. It seems to me that "the world's leading independent producer of software" would expect someone who could write a user-friendly installation program, like spreadsheet, in the software industry.

Once you have gone through the installation and setup procedure and installed *SuperCalc 5*, you find a spreadsheet program rich with functions (it takes 98 pages of the Quick Reference manual to simply display all the menu options on a screen list).

SuperCalc 5 uses the aging "stack" command Lotus-style interface. The menu has many more features than Lotus, but one has to ask oneself, why would anyone want to copy the Lotus user manual?

Sure, Lotus is the top spreadsheet program and has a lot of features, but this interface in the years did not need to be reworked. *SuperCalc 5* would be better off with a more creative and better designed user interface. (It can be done. Just look at PlanPerfect.)

You can choose to use a Lotus-style *SuperCalc 5* menu system or an exact duplicate of the Lotus 1-2-3 interface. For menu reasons, the status bar helps link some commands existing in the Lotus 1-2-3 interface but is present on the *SuperCalc 5* screen.

The online manual is very effective and we recommend it highly for first-time users. After using the manual, you can print the book spreadsheet from time.

Reports and Output

SuperCalc 5 has built-in the many printing power as all Computer Associates products. In addition to the standard Computer Associates printer drivers, *SuperCalc 5* includes a range of filetypes, a utility that allows you to print special character strings, and a feature that allows users to extend the output.

One of the more drivers will allow output to be transferred to Venues Publisher, for higher-quality reports.

Documentation

The documentation is a complex and concise and includes a reference guide and a user guide that can help users

better understand the concepts of the package. Even a manager is able to understand and explain an spreadsheet.

Limitations

SuperCalc 5 is not limited to 386- or 486-based machines with extended or expanded memory on other spreadsheets are. *SuperCalc 5* is limited to 200,000 cells on one spreadsheet. You can display up to 200,000 cells on your screen simultaneously.

SuperCalc 5 includes an Audit mode that can go through your spreadsheets and debug them for incorrect formulas, etc. The use of your spreadsheet to people creating large spreadsheets programs with complex formulas.

Conclusion

For highly complex spreadsheet applications, *SuperCalc 5* is very effective. The new Lotus multi-format is much like a program debugger. For a first-time user, the new interface may be a little cumbersome, but in time you can get used to it.

In choosing a spreadsheet you must evaluate how many features you wish to use, then purchase it in one package that gives you all the functions you need. For the cost of purchasing a single, stand-alone spreadsheet when you need 3-D spreadsheets, if you need complex spreadsheets, *SuperCalc 5* is a worthwhile investment.



Product: *SuperCalc 5*, spreadsheet software for IBM personal computers and PC networks.
Publisher: Computer Associates International Inc., 3rd Floor, 1775 Burton St., Vancouver, B.C. (604) 733-0343

System Requirements: IBM XT/AT or Compatible, DOS 3.0, hard drive, 640K free required, more, VGA, EGA, VGA monitor, can operate on a network.
Price: C\$899

Key Features:

- LHM 4, 4.5 support
- Integrated graphics
- Import/export
- Search and Replace
- Macro Libraries
- Links and Tables Lotus 1-2-3 files
- 3-D linking up to 255 spreadsheets
- Data encryption
- Computer Associates Diagnostic Service available
- Audit mode

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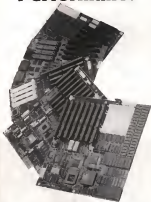
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SPREADSHEET ADD-ON PRODUCT

F9

Version 1.11

by George Stelm

Overview

F9 provides instant retrieval and analysis of ACCPAC Plus G/L information from within a Lotus 1-2-3 worksheet. *F9* allows you to access information on your ACCPAC Plus General Ledger accounts line by line as if it were a Lotus 1-2-3 worksheet. It uses the reporting forms of Lotus 1-2-3 to produce financial reports that are not available in the ACCPAC Plus Financial Reporter.

Report writers are existing products. There are currently two report writers for ACCPAC Plus: *Excel Quick Reports*. Each of these solve a different problem. *F9* gives you the ability to use Lotus 1-2-3 power to manipulate your ACCPAC G/L data. Instant *Quick Reports* is not as powerful as data manipulators, but you can access data from all your ACCPAC applications. It has report tools that other products and handbooks may need as different users.

Setup and Ease of Use

F9 installs with a seven-dimensional installation program. This program also instructs *F9* to Lotus 1-2-3 in a Lotus 1-2-3 address.

When you load Lotus 1-2-3, *F9* is available for you to add-on programs. All the Lotus 1-2-3 commands are available, as well as some special *F9* commands, such as *WDRG* which prints the description of the account used from the ACCPAC database. The function covers the reporting are similar to those used in the ACCPAC Plus Financial Reporter, thus there is little confusion.

The *F9* user interface is identical to the Lotus user interface so when you are using spreads *F9* has less than you do and more you are not running Lotus 1-2-3.

One warning to potential users of *F9*. In order to gain full access to all the power of *F9*, you have to register your copy with Sigma Systems. This system is a pretty expensive, but after you spend your money for a software package, you expect to have the full working copy available at the last. With this in mind, do not start working late Friday night hoping to speed the installation up after that arrives on Monday. Until you register the product you are limited as what you can do.

Another fact you will have to deal with is implementing *F9* (and all report writers in general) so that you have to know the structure of the files you are accessing first-hand. If you do not know where the data is, you cannot create a report on it.

For example, if you want the balance of accounts, do you want the current balance or the current period balance, or do you want the last period balance? All this information is stored in different fields of the database.

Reports & Documentation

The range of reports you can produce from a financial reporting such as *F9* is virtually unlimited, or so the user has to be the power of Lotus 1-2-3. Financial report writers are general and very useful tool, and it is easy to get excited about



Product: *F9* Version 1.11, general ledger financial reporter for ACCPAC PLUS General Ledger with Lotus 1-2-3. For companies whose reporting requirements are too complex for the reporting function of ACCPAC PLUS General Ledger.

Publisher: Sigma Systems Corporation, 800-1170 West Georgia St., Vancouver, B.C. Canada V6E 4A2. Phone: (604) 685-8271, Fax: (604) 685-1258.

System Requirements: IBM PC, XT, AT, PS/2 or compatible. DOS 2.1 or higher, ACCPAC PLUS General Ledger V1.0 or higher, Lotus 1-2-3 V 2.2 or higher, 2.5 hard disk or network drive, 512K RAM, 440K recommended. VAX/VMS also available for Macintosh, Great Plains Solutions, Platinum and GST. Price: Cdn\$99.

Key Features

- Automatic ACCPAC G/L interface
- Additional functions
- Create Turn-key reporting systems

for various types of information you can retrieve.

Let your imagination go wild to dream up the information you want, then use *F9* with Lotus 1-2-3 to get that information produced in a format that often suits your needs. The data, graphs, charts, pie charts and text tables can all be produced.

If you have a question or feedback for a complete, concise and easy to read.

Limitations

F9 will only work with Lotus 1-2-3 Release 2.2 or release 3.1. As Lotus is now shipping release 3.1, you may be excited to purchase release 3.1. If you are planning to use *F9*, it is better to wait for the release 3.1 of Lotus 1-2-3 and some say even better is to wait for the *F9* release with ACCPAC Plus version 3.0 or higher.

Until you have complete and complete copy of *F9* you are limited to 40 cells of general ledger data per spreadsheet and you are limited to the number of 40 times you can create per spreadsheet.

Conclusion

F9 provides a very useful function to those who need more from their ACCPAC G/L data. When you know the information in the database but you cannot get it out as a very interesting

With *F9* you can access the data and present it in any way you want. I recommend *F9* to users who are not excited with the ACCPAC Financial Reporter in the G/L.

PERSONAL TAX SOFTWARE

Cantax and Hometax Plus

by Don McEwen

In the world of personal tax preparation software, for the last few years one product has dominated the marketplace—Quicken.

Now there is a new player, Hometax Plus. Hometax Plus is developed by the same company that produces TaxTRIT, one of the major commercial tax preparation packages. Now that there are choices in what package you should use for preparing your own tax returns at home, we feel we should compare these two in detail.

Product: Hometax Plus Personal tax preparation software

Publisher: Hometax Information Systems, 402-85 Adelaide St. East, Toronto, Ont. M5G 1K6

System Requirements: IBM XT/AT or compatible, 512KB RAM, DOS 3.1, 2.5MB of free disk space

Price: C\$49.95 plus GST

Q: Interest T: A person who wishes to prepare his or her own (single-personal) return, and keep an electronic record of their personal financial position.

Key Features: T1 tax preparation and printing, Tax planning, Financial recordkeeping, Personal directory, Expert tax advice, Financial calculator.

Overview

Hometax Plus will prepare a single T1 tax return for one or more individuals. Hometax Plus also has a number of additional features: tax planning, expert tax advice, financial information portfolio, personal directory, and financial calculator utilities.

Setup and Ease of Use

The program installs itself with a simple and complete (usually as today) Quick install. It is able to prepare a single tax in 30 minutes. In preparation the tax return form with Hometax Plus, the user moves down through the whole form, matching the same way of filling the form out by hand, and the entry system also looks similar to the actual tax return form. This makes a more friendly user interface.

For the other features of Hometax Plus such as the tax planner and the financial recordkeeping program, the user interface is extremely very acceptable, but the layout of the tax return preparation are not so computer-pleasant as the preparation alternatives. One hopes that tax preparation software is designed to make it easier to prepare a tax return. This does not appear to be the case with Hometax Plus.

Reports & Documentation

Hometax Plus allows the user to produce a complete tax return. We did find that of the return was prepared on a 119 Lexjet printer. If the return data was printed correctly on the page, I did question Hometax on this since we did print out on more disk which they said would be the problem.

Hometax Plus documentation is complete and also includes a book on expert tax advice. I read this book, and what struck me was, it is useful advice as the book Hometax Plus would then be useful to use because my tax return would be too complex for Hometax to handle.

Limitations

No errors were encountered while using the package.

The tax preparation package is very lacking. In fact, on page 10 of the manual there is a list of 36 different schedules which the program does not produce.

For professional tax returns, there are five schedules which cannot be produced by Hometax Plus. For any person's tax return there are eight schedules which cannot be produced by Hometax Plus.

As a matter of fact, I quickly looked at the two versions of two company books and only one can have their complete tax returns prepared by Hometax Plus. Hometax Plus claims that their home version only includes 35% of the foregoing public in the other 65% have such a simple tax situation.

However, it is just those who have a little over-complexed tax return that we are looking for a software package to simplify it for them. They are sure also simple that Hometax Plus could prepare it. I would probably go to think it back in Hometax because they would charge me much less than what Hometax Plus costs.

Thus, Hometax Plus (Hometax Plus) is not compatible with Quicken. It is not. The theory is that you keep your bookkeeping in Quicken, then when it comes to tax time, Hometax Plus takes the information from Quicken and your tax return is prepared from that.

This is a great idea and would be useful for most professionals. The problem is that anyone who would use Quicken could not use Hometax Plus because of an significant number of limitations.

Conclusion

Hometax Plus prepares only very simple tax returns. It is quite limited as to the schedules it can produce. Complete returns have to be handled by direct entry of information from other forms not included. This severely limits the functionality of Hometax Plus as a tax return preparation package. However, it does have some features that Quicken does not that you may or may not find useful.

Product: Cantax, Personal tax preparation and financial recordkeeping software.

Publisher: Cantax Corporation Ltd., 55 Parkview Drive, Oakville, Ontario, L6H 6H6

Price: C\$55.00 including GST

System Requirements: IBM XT/AT or compatible, 512KB RAM, DOS 3.1, 1 MB of free disk space

Q: Interest T: A person who wishes to prepare his or her personal tax return and maintain for next year's taxes.

Key Features: T1 tax preparation and printing, tax planning.

CONTINUED NEXT PAGE

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SPREADSHEETS

Lotus Improv—The Spreadsheet Re-defined



By moving a category of calculations from here... to here, Improv restructures your spreadsheet automatically.



Product: Improv 1.0
Publisher: Lotus Development Corp.
System Requirements: No.27

Price: US\$495 (bundled free with new MacXT system until Mar 31, 1981)

by William Barr

After you have had a chance to use Lotus Improv on the MacXT, you will wonder why you use another spreadsheet.

3-D Glasses Required

Upon entering the 1.0 system to install, it is easy to believe that Lotus has designed a 3-D program for spreadsheet users. Any spreadsheet becomes a 3-D, 3-dimensional image that you can see regardless of how it is drawn. It gives a different way of looking at numbers.

Lotus quickly becomes a victim of its own success. The financial and accounting spreadsheet users desire to 3-D like nothing else ever flows. They caught even my first 1.0-4 from the IBM-PC, its users' view.

Lotus found that with such a large user base, another avenue beyond the basic design was difficult to discover. Later releases had to be compatible with previous versions. So, for a number of years, it has been trying to build a better spreadsheet. (Because it is that a difficult spreadsheet user of several years being on a version of Improv, originally the IBM-PC, had a user's view.) When these jobs paid a visit to Lotus, the developers found a machine for Improv.

At first glance, Improv looks like any other spreadsheet. From most calculations of cells appear as in Excel or Wang. The basic functions of all other spreadsheets are there as well. Formulas, copying, scrolling and programming are all available. But the basic underlying abilities. You can build either 2- or 3-dimensional spreadsheets. But you have to build it like due to one cell's under the hand.

Improved Look

The first difference that you will notice is the look of Improv. That is due to the MacXT graphics, not interface. MacXT graphics are a top improvement, even more, and it provides clarity into a spreadsheet document. This makes possible new multi-media presentations of data. Since MacXT has new Display FontPro, what you see on the screen is truly what comes out of the laser printer.

Conceptually on Improv even there is a step to discover the "cell" there, even creating of a working data is a relief. Unlike most spreadsheets, which from most users to it involved confusion, Improv provides to use English text and numbers are used by you. While you are designing your spreadsheet, these labels contain their language and remain related to the data they represent. For example, if you define column "B," column "C" will be renamed "B," "D" will be renamed "C," and so on. In contrast, labels identify groups of data.

Logically formulas also appear in English. Portions of your work are used to "B2:B3,C4:D5, E10:11." Improv shows these formulas as "B2:B3,C4:D5, E10:11" as groups of data.

Spreadsheets are "tables," you can easily move past steps because all a spreadsheet without having to reenter data in with formulas. In addition to a general formula applying to a group of functions, any individual cell can have its own unique formula within a general formula. This allows you to work with formulas in data, easily.

However, you can spend hours designing the world's best spreadsheet and not have it understood. Lotus believes that the user who must a picture is worth a thousand words.

A review of 20 real 3-D charts/graphs are available for the user.

Since the graph is dynamically linked with the document, any change made in the spreadsheet is instantly reflected in the graph. Legends and labels are automatically generated, and axes are easily changed. As stated before, you can even attempt sound to your desktop presentation.

Unique Advantages

In its own spreadsheet, Improv makes that advantage of the MacXT. Since there is a User box, it is possible to collect data using a background program and build a spreadsheet using that data, automatically.

The 17-inch display easily accommodates Improv's ability to display several sub-tables, graphs, and other data all on one screen. It is also possible to link data in one spreadsheet with any other spreadsheet (no disk) using dynamic data links. Anything, that may all seem new, but it hasn't been reached the good part yet.

What you improve apart from other spreadsheets is the manner in which you can manipulate data. You never also about

Using a single-oriented approach to spreadsheets is called Lotus to give you a powerful method of work. Instead of using a fixed preference of traditional spreadsheets, this one needs for you concentrate on the task at hand instead of spreadsheet design. Now you know what is speed your budget spreadsheets.

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Wayside Technology

WASHINGTON, DC, JAN 15 (AP)—Wayside Technology, a small Minnesota-based producer of Microsoft-compatible CD-ROMs, has announced the availability of "Down to Earth," a collection of more than 700 high-resolution color and monochrome (PCL format) desktop publishing images. "Clay Art Masterpiece Volume 1" contains over 1500 natural-terrestrial images and sketches.

"Down to Earth," a \$199 CD-ROM, displays various images related to conditions on earth, including waste dumps, flowers, food, landscapes, and nature scenes.

"Clay Art Masterpiece," with a list price of \$149, contains 500-to-600-per-inch TIF and PCL format images indexed in HyperCard.

For further information, contact: Wayside Technology, 8100 Hwy 87, Rapid Lake, MN 55402. Phone: 612-649-7321.

Sony Video Interface

SAN FRANCISCO, CALIFORNIA, JAN 15 (AP)—A "black box" that lets Microsoft companies control many consumer video products has been announced by Sony. The VICON controller will give users complete remote control over most Sony products.

The VICON, which is about the size and is about the size of a paper-thin book, lets Sony's proprietary LANC remote-control commands and its WEGA on-chip control protocols. To date, only Sony video devices include a LANC port—specifically all home products and select products sold after the introduction of home. While Sony plans to eventually publish the specifications to VICON, it intends that Sony users there are no place a build their own that will bring the LANC and WEGA protocols in equipment that doesn't have these elements built in.

Among the Sony products that include LANC capabilities are Betamax camcorders, Video 8 tape decks, VHS and Betamax VCRs, recorders, and laser disc players.

When Apple G-series writing drives for the VICON, Sony officials said, users will be able to control video equipment in much the same way they control printers and disk drives—in effect, printing to and retrieving data from video.

One of the breakthroughs incorporated in the VICON is the price. When available early this spring, it will have a retail price of \$159, Sony officials said.

Sony said Panasonic and Microsoft agreed to incorporate VICON technology into their products in 1991. Other software publishers are also known to be interested. Contact: Technology Solutions, 212-605-0800.

EVENTS

Pacific Rim Computer & Communication Show Report

By The Computer Paper Staff

Attendance was up slightly over last year, with 15,107 people attending the largest computer show in the world (The Great Lakes Show) was staged at the World Trade and Convention Center in Vancouver. The Computer Paper was again held a booth, and from our vantage point on the floor, we got a glimpse of the LD display of a large number of government and corporate visitors to the show as they, too, stopped by to pick up our latest issue. Here's our survey of some of the highlights.

Just inside the front doors, the Sharp and Toshiba booths were spectacular, with lining the "Grand Entrance" of the convention. A huge crowd at the Sharp booth stood gazing at the 128 colors of its new PG-8000 VGA color 1280 laptop. You could hear the crowd and see them across the room, as well as the enormous gap between \$149,995 and no reservation.

Hardly leaving the floor by many of its competitors, Hewlett-Packard was the show's big star, with an impressive wall-length booth that ran, at least, the width of an aisle. Featuring a full line of products, the display was staffed by Hewlett-Packard's personal computer group. Bill posted from all over Canada and the western US.

Just down the aisle, at various times during the day, presenters occurred in a special "Business" area. With an actual capacity crowd swarming at the wonderful world of multiplatform, multiplatform graphics as presented in video and documentation by the Image Cook, etc.

Robert DG was showing an interesting hand-held scanning machine, as well as the line of GAMA machines, which, prior to the show, Hewlett-Packard was handling out plastic graphics capability from its own digital videorecorder (as a reported computer page of 199), as well as document scanning, scanning and lower-priced, but still impressive color thermal transfer printers. The Mitsubishi corporation explained that the most important aspect of their new line of PCs, including Zenith and Zenith 386.

Also showing high-end color output solutions in the show was Kodak, with its own 2177000x resolution printer and ColorSpace software. A color output device of a different nature was found at the Brother booth, where a new \$9,250 color copier was making color images from plain.

Just down the aisle, the Sony Cybernetics booth was set up with a striking new and a product which, a representative gave heavily demonstrated. In the background, several monitor screens displayed HP Corp.'s ColorPrint, including a new WorldView for Windows. The HP booth was awarded the "Best of Show" award, although there were many other hits. Also a significant multi-media display featured the Internet. A few people were (heavily) interested in the volume of the day's IBM news of performance emanating from the show stage, although the theme by multi-

workbooks than others. All IT business programs (word processing/spreadsheet/databases), desktop publishing, information storage and retrieval programs I used seemed to function correctly. These IT programs didn't manifest as many performance "bottlenecks" as I have seen in nonbusiness programs.

Lessons learned from IT programs that had color graphics, animations or complex formulas. Installation of the necessary MIDI sequencers—C-Lab Mastered and Sequencing/Colorware—didn't affect the popular and powerful drawing Pro Designer, which worked as fast as before. I did, however, notice program features.

First, please be sure that Colorbug's high-end color sample-editing program Speed Designer worked fine. No misprinting, no matter how many of digital color files that require just the first of four-step IT color cycle.

I successfully used a paint program called Sketch to do layout work on-screen. On-line (in high-end vector graphics drawing programs) approximately the same capabilities to Color Draw or FreeHand, and numerous PDF utilities. One of the best programs available for the Amc 386/33C is the desktop publishing powerhouse Calamus.

On the IT, its performance is something. As an example, a full page of Calamus graphics and text prints from the TT to the Amc 386/33C printer (at 300 dpi) in 10 seconds. Calamus DTP programs on any other computer can appear to be just less convincing that really is.

Amc 386/33C is not where the Lotus 1-2-3 or corporate spreadsheet LWP Forms and Precision Software's Superbase database. (The TT's overall 386/33C disk drive directly reads and stores standard IBM 720K databases, making data transfers to and from PC a snap.)

Using Stellar and Stone, possibly the best terminal and user editor combo available, as reportedly even possible to run several different copies of Windows at once, in addition to the TT's own user ports for multiple information systems at (if, of course, you would need to have several phone lines).

A few programs do a masterful job of the TT's increased capabilities. For example, even though the TT has no on-board math co-processor, BD's supported DataCAD program does not currently utilize it, even though DataCAD requires an optional math co-processor to realize Mega IT models.

However, even without co-processor support, DataCAD's macro-driven CAD program, on its own, has been recognized by Amc 386/33C as the one that DataCAD can even output to the Enhanced GAMMA operating machine network from the other manufacturers. Calamus graphics drawing, working in a great "visual market" solution for top design and design studios.

WordPerfect, one of the "big names" in IT productivity software, had problems when I used it, but I was convinced by WordPerfect Corp. that an update released December 6, 1990 in TT's was possible. I was told by Ron Goss of CDSB Systems that if you show them the TT's key report (see p. 54), the new problems with earlier versions of WP can be worked around.

Also, WordPerfect when IT games that were unable to run—then in doubt in programs "breaking the rules" in update extra speed out of their code libraries, though, I doubt that the IT

improves in the price, willing to shell out almost \$4000 for a Unispace workstation.

One product that has already been updated for compatibility with the TT is the popular Macintosh software Spectra GCR. Using version 3.0 of its software, I found that this program was able to develop graphics on the Amc 386/33C in a 386/33C mode, and I could read, write and format both DCL and Mac disks from Amc or Mac modes (a great feature).

The TT/GCR combo already can enjoy Mac programs (I'm not talking to a Macintosh program called SpectraGCR, an update comparable to a Mac 386/33C, including HyperCard, Adobe PageMaker, Quark XPress, Microsoft Word, Adobe Illustrator and Photoshop. According to Spectra by itself, users of the GCR, the TT's high-resolution color monitor's entire 1280/960 display can be used as the Mac desktop, or run the 640/480 color mode mode of the color display.

Direct printing to dot matrix, dotjet, Laserjet or Postscript printers is supported with appropriate drivers. Local/DAI network support for the TT's built-in AppleLink port is not yet provided, but it is expected that support of the Spectra software will support the Mac 386/33C device.

Free Advice

A few of the sample programs provided on the disks that came with the TT are so weak, it's embarrassing. I suggest that Amc include a few better sample or graphics demos (there are some desktop utilities), demonstrate versions of CAD or DTP applications—heck, anything would be an improvement over these trivial offerings. (I'd suggest that the developers would need just to have demos of their software installed on the TT's drive.)

Better yet, Amc could take up with the Mac/IT and handle some real applications with the system. More than anything, Amc needs to give people solid reasons to buy this baby. Some may argue that that's not part of the mission, or VAG (value added goods) but it is apparent that to get this "free" or "don't" and even be considered, Amc has to offer a price/performance ratio that is not just a word, but a fact that the competition.

Apple, as usual, is no exception. In 386-based Macintosh machines are priced thousands higher than Amc's offerings, but Mac/IT is breaking down everybody's price in the 386/33C range, especially when you're getting a second pricing. If that then the TT's price is about \$1000 too high, but then again, the TT offers more and a larger software base than the Mac/IT does. Plus, the TT can easily be made IBM or Mac compatible, which is something that (as much as Steve Jobs might tell us), his company cannot get close.

In Conclusion

If, as the saying goes, we are known by the company we keep, then the TT is known for its ability to communicate in higher education and corporations, in education as popular design studios in terms of markets like DTP, CAD and professional MIDI environments. As always, I recommend you make sure that you use the software you want to use.

Easy to set up and use, the TT is a good example of inside-the-box computing.



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CONTINUED FROM P. 49

Wednesday

Right next to Kinnear's booth, and also next to Microvision (that doesn't mention Colibri's company and fellow member with Kinnear in Vancouver), Microvision's distributor, Watershore, a collection of education and public relations companies that is grouped together by theme and called Miniplex. They put together 10 disks of their best software and public-domain software in a particular topic (e.g., children's education software) and sell them at 10 disks, with five or six programs on each disk, at a suggested price of \$25.00. Microvision also has a "Monday's" C&D software offering that sells for the same price. Watershore is a Vancouver company by London Drugs and Future Shop.

Bithelpful Vancouver's Microvision's John Morley will be on for the show itself at the Bithelpful Centre as himself.

"Page Me in Toronto"

Several companies thought they had a page, or at least one with pages, showed up in hand. They did not have pages to be off on business in, say, Toronto or Montreal, and will get paid by insurance in Vancouver.

A national paging service is provided by National Paging, one of the exhibitors at this year's Pacific Rim Computer Communications Show. There is one catch, though.

"You have to pay more for it," said Steve Batcliffe, sales manager for National Paging's Vancouver PageMe, the unit, as first to offer national paging service, which provides for nationwide access that costs a few dollars. Paging services are not yet available for subscribers residing in the U.S. or abroad.

National Paging provides telephone answering and page answer services and products through franchises and dealers across Canada.

Quality Learning/

Schoolware

Looking for a computer alternative to Microvision for your software offering? Look no further than Precision, where Quality Learning Systems is offering its "Schoolware" educational software for

school-age students.

It's not intended to replace the teacher in class, in any way, either in math, and company president Sally Kinnear (58, parent and teacher, teaches a collective class of 100). "Schoolware is intended to supplement school courses, it's better if the parent uses it through the program with the student," he said.

Quality Learning was exhibiting an educational product at the Pacific Rim Computer Communications Show last Jan. It's called the World/Wide Curriculum Unit in Vancouver. According to Kinnear, there's about 100,000 copies of schoolware software out there, both from parents and potential donors.

The new version of Quality's last product, Grade 5 in English, should be ready to ship at the end of January, and Kinnear, with Charles, 11, is eagerly waiting for the end of March. These programs are being used in their own home.

Schoolware is presently based in the modern home has a computer based on an AT (IBM-based) computer, with VGA monitor. All the versions may be available by telephone, as well as high school network.

Quality is developing a new edition and distributing Schoolware's Teachers' especially Materials. Kevin D. Martin, has played a large role in the design of the program, and a few others have been used in Precision schools.

Quality intends to distribute Schoolware right across Canada. Orders have already been received from various Ontario communities.

Suggested retail list price is \$49.95. Contact: 499-0295 (Precision).

Great Giveaways

What's a computer show without promotional tickets and bags to get all the freebies? Here's an incomplete list of some of the goodies that caught our eye.

Joshi's Papers (anonymous). KIS, Harveys, Kinnear, is that one, is what?

Stewart Computers (Don't be Lousy). For 200 copies.

The Computer Paper (General and back issues, free goodies).

Quality Learning Systems (the shape of software too). 5.54-inch disks.

AFTER HOURS

BANNER MANIA

by Robert Tennant

Most people who read this magazine take computers seriously.

After all, we are business people who look to the computer to get our work done. When we work on a computer game now and then we don't talk about it much. Well, that's a business application that's not fun, that's not fun, that's not fun.

Banner Mania is dedicated to one thing—publishing banners, that's all. It does it, just as you like.

You get your disk and a text screen which you don't read, install it on your hard drive or run it straight from the original floppy. You are controlled through a series of self-explanatory screens. A description or short instruction appears when a selection is made so whenever I need any further help, although I'm already getting it.

To start the program at the DOS prompt, type "Banner" and press Enter. Then the program is loaded, press Enter again to get past the "Banner Mania" opening screen screen.

At the Main Menu, you can start using it to create your own banner or load an existing banner to display on your screen. The first choice is to create your own banner, to select Banner a Printer.

Banner Mania supports a wide variety of different printers, the preference to create banners. It also supports a selection of different printers, which you can select the printer banner or logo.

Wide ranges and color are supported, too. Your printer is probably going to be on the list.

Select your printer and press Escape to get back to the Main Menu, indeed, a matter where you are, Escape will take you back to the previous screen.

To create your own banner, you choose Create New Banner on the Main Menu. You choose either a one- or two-line layout, then type in your banner message.

Now comes the fun part. You are guided through a series of screens which make it look like you're making a banner.

pressing one of the 10 available choices on the Main Menu. You can then press one of 10 effects on the Banner Menu such as outline, shadow, block, perspective, halftone, etc. You can also specify a word or letters from the banner.

Finally, choose the Color Set Menu. The chosen set of colors is used to create the banner. Most of the time, the chosen colors will be the same as the ones you chose on the Main Menu, but you can define the shape of your message.

There are 25 different shapes to choose from, among them wedge, rectangle or square, many or even two-line shapes. Then to the end of the final selection screen. You can move at the Main Menu, where you can go ahead and edit and your banner. But wait—your banner may not be the right shape or position on the page (the way you want), or perhaps you may want to change the color of the drawing.

Not to worry. Here you can also choose your personal selection. Select Change Colors, or justification. You can also change the size of your banner and change the length from 1 to 100.

It's time to go to the Main Menu. Press Enter. It takes a while to go through the process, as I suggest you press the printer by pressing F1 from the selection of Function keys at the bottom of the screen.

The screen will turn to scroll down, showing how your banner will look complete with page perforations and horizontal lines. When you have seen enough, Escape back to the Main Menu. If it looks good, you can save from the menu, before you print.

So you can go ahead and print now? If this were a real program, I would say yes, but it's not.

To really get an idea of the whole story of how your banner can look, select Transparency, then be prepared to print. Pressing up or several times. This is the really fun part.

Then hit continue banner and last moment potential problem. For example, you could edit while your favorite alternative communication before you print or set up a color monitor and then choose to display your product message on a color monitor.

Robert Tennant is president of Office Evolution (PIT-Edin).



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NEWSBYTES

NEC UltraLite

Product: UltraLite notebook computer

Manufacturer: NEC Corporation, 1255 Michael Drive, Wood Dale, Illinois 60191-1204

Configurations: Reviewed: 540K RAM, 2MB storage disk 2400 tpe random access floppy

Price: \$1335, 256K RAM cards \$325 each. Additional batteries \$145 each



by Guyon Bennett

First Impressions

The first thing I noticed when I plugged in the UltraLite AT Adapter/Charger was the convenience of having only a 1-foot cable between the transformer (about three feet of a power of cable, but built in light) and the mini-IDE plug that sticks into the computer. The first reason to get the AT adapter on the desk. If you can't find the thing you put away plugged into AC, good luck!

The UltraLite has an auto and floppy drive or hard disk, internal using a 2 MB "token" disk—standard type without of looking this loaded from the external floppy another 10.

I found the floppy cover over the external port, where the system's floppy drive plugs in. Okay, the way does (fill off) the drive can't be broken, it clips back. The floppy drive's cable is even shorter, a total length of one inch. Third, goodness it plugs into the side of the floppy drive and not the back.

The drive, installed as part of the UltraLite package, has a capacity of 1.44 MB, but also reads 5.25-inch, 1.1 MB disks. I was sure that I would find the system's only floppy port on the back of the unit. The answer that you'll have to park the drive with you if you want to print anything to a Commodore printer, unless you go over to an optional parallel adapter cable from NEC.

Look and Feel

The UltraLite itself, more decorated than its design and almost dark, is a remarkably light case that encloses the big system, a notebook computer. A monitor of PC Magazine's Technical Excellence Award, the 8 1/2 x 11.5-inch screen is small enough to easily fit in a briefcase, or travel conveniently in a pile of papers. At 4.4 pounds (including battery), it is light enough to be picked up as one hand.

I found the keyboard feel and layout, with function keys and the arrow keys in the popular inverted "T" layout in the lower right corner. Lights are provided on the NUM LOCK and CAPS LOCK keys, and an auto-ALT key can be located at the right of the keyboard.

The screen is CGA/monochrome, quite large, appearing as dark blue letters on a white background, with good contrast and only a hint of horizontal interference patterns, often seen in most other CGA laptop displays. When left unattended for a few minutes, the screen goes into a power-save mode. Contrast and viewing angle are adjustable.

Silicon Disk

When the UltraLite is turned on, after a brief test of its 640K of system RAM, it boots from an internal ROM drive "D:" which contains DOS 3.3 and the MS-DOS memory optimization shell. A first "C:" is also available which, unlike D:, can be written to. HDC refers to this pseudo-hard disk as a "token disk." Installing Software's Lap-Lock (found) is included to facilitate the transfer of data from desktop PCs.

The drive is incredibly small size is primarily due to its lack of an on-board floppy or hard drive. With only 2 megabytes of "token disk" storage, you are therefore limited to the amount of data you can load into it. Or are you?

On the side of the unit, a (difficult to remove) plastic panel reveals a card slot, for plugging in an additional credit-card-sized disk of RAM or ROM. The proprietary RAM cards have a capacity of 256K. Popular programs on ROMs are also available, including Lotus 1-2-3 V.3, Lotus Agenda, XTRAX, WordPerfect 5.1, MS Works 1.0, Memo Express and WordStar. According to Lotus a billion of Compaq Portable Computers, previously, but cost about \$400-\$500 each.

On-board Modem

The UltraLite comes with a built-in 2400 baud Hayes-compatible modem, as well as an internal 5-pin DIN external RS-192C serial port. A cable is supplied that adapts this port to the typical 25-pin serial port found on external modems, mice and most printers. Also included is the UltraLite key tag: are telephone and public ports, with what appears to be large female heads built into them, presumably to help reduce line noise.

Manuals

The UltraLite comes with several manuals including a Quick Start Guide, Portable Guide, Applications Software Guide and Comprehensive User's Manual. NEC also has a Technical Support if you have any problems, and a one-year warranty.

Conclusion

The battery life of power alone about two hours, which is rather short compared with many other laptops, but that the UltraLite is considerably smaller than most, and, and better has low battery warnings. At its original price (as the \$1450 model), the UltraLite was a notebook for the class. Now it is dramatically reduced price and a more for the masses.

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EXCEL 3.0**CONTINUED FROM P. 34**

profit ratios—without total advertising spending exceeding \$40,000. Sales would provide your income.

Later boxes 1-4/5-5/5. Sales were calculated, programming methods to handle a wider range of problems than the former approach used in Borland's Quattro or Quattro 2's SuperCalc.

Hyperlink Functions

Double-clicking on a SUM function shows how that figure was arrived at. You can even double-click on information con-

taining references to another worksheet, and Excel will open it and select the relevant cell.

You can attach notes to cells that explain or comment on entries. Text boxes float up to 200 major fonts, graphical objects work on layers with worksheets, tables, curves and piecharts can also be attached to worksheets.

A data consolidation feature (previously only available in Excel 1.05/1.2 version) allows the summarization of information from a number of worksheets into one worksheet. For example, different worksheets have sales data from different geographic areas over the same time period, the

data can be quickly consolidated in a fourth worksheet — a departmental budget-balances or a division.

Great Graphs

Like PageMaker and PowerPoint, Excel 3.0 supports Microsoft's Dynamic Data Exchange (DDE) protocol. This means that you can embed an Excel graph in, say, PowerPoint when double-clicking on it will bring up Excel. And what graphs? To begin, not as expensive as those of *Wings*, Excel's graphing capabilities are clearly superior to 1-2-3's.

Custom library palette can be created and graphics from other sources

can be imported. Charts can now be included directly on a worksheet, and pictures can be pasted into your 3-D charts, and used in series markers. For example, a picture of a gas pump could be pasted onto a graph of gasoline sales and multiple copies of it stretched or shrunk to represent the chart values.

3-D axes rotations, line and per chart formats are also possible, and charts may be used as movable symbols on a worksheet, like the killer feature in *Lotus*. To perform a graph of sales/analysis, simply select a data series, hold down the <Ctrl> key and click a data point or point in the graph. Excel automatically brings the corresponding value in the worksheet. *What's in what?*

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QUATTRO PRO 2.0 CONTINUED FROM P. 38

wanted to calculate a desired outcome. An example of how you might use this would be to enter up sales for the desired figure that you would want to achieve a desired profit outcome. The function is easy to use and set up.

Documentation

Quattro Pro 2.0 has a great set of manuals, well laid out and with simple screen shots and a reasonable index to speed information access. There is a Getting-Started guide, a user's guide and a book on macros and functions. Borland also includes a handy spreadsheet spreadsheet manual, personally designed to help you pass questions to manual pages when you have forgotten how to do some rarely-used function.

Conclusion

This release is an evolutionary improvement on an already good spreadsheet. It offers spreadsheet, flexible compatibility with the industry-standard *Lotus* file format, more graph styles and graph capabilities, and good presentation graphics skills. Borland's attractive approach offers for non-Quattro users should make this a positive recommendation.



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Abstract:



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READY, SET, GONE....

The 486 story.



T

echnical advancements have affected each and every one of us in one way or the other.

Whether it be an automated banking machine, or microwave ovens, the effects are outstanding.

The computer industry has been both blessed and brow beaten by new technologies. Everyday we hear of new ways of doing things to make us either look better or work more productively. Much of this is simple hog wash and can be taken with a grain of salt. Others such as Intel's i486 microprocessor, are truly destined to shape our lives.

In this article we will discuss the technology behind Intel's i486 processor family, where they fit into business, and why they are destined to become the next desktop standards.

INSIDE THIS ISSUE

New ADT Portals	3
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AND Others	8



The 486 story cont'd

Simply Put

The 486 microprocessor is simply a spruced up version of the 386 processor developed in the mid 1980's. By integrating onto one chip what before took three chips, and throwing in a couple splashes of speed enhancement routines (kind of like adrenosteroids), Intel was able to improve processing performance by leaps and bounds.

The 486 is kind of the mini-mind of computing. Instead of having three chips in three different areas, Intel took all three stores and stuck them under one roof, added a drive through check out, and a "9-item or less" express lane.

More technically speaking, a microprocessor, cache co-processor, and math/numeric co-processor were integrated together into one chip. By doing so Intel was able to do these things:

First, by putting all of the silicon onto one chip, they eliminated the need to develop pal chips to enhance the processor's performance. This was now left up to third party developers to do so at their own time and expense.

Secondly, costs could be kept down, by only requiring a single manufacturing source rather than three.

Finally, Intel no longer had to compete against such companies as Cyrix and HT in the math/numeric co-processor market.

The two other enhancements which the 486 introduced include Pipelining and Burst Mode. Pipelining technology simply breaks down

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Premium 386	2.0	12.7
Bravo 386sx	2.59	18.6
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Premium 386/25	5.18	40.5
Premium 386/33	6.77	54.0
Premium 486/25	10.7	112.0
Premium 486/33	N/A	140.0

complex instructions into a series of simple ones. Resulting in dramatic performance improvements in both floating point and standard processing. Burst Mode is a technique used to improve the transfer of data between the processor and main system memory.

The Microprocessor

So far we have assumed that you were already aware of what exactly the microprocessor's function was within your system. Simply put, the processor is the heart and soul of any computer system. It is to a computer what the central nervous system is to the human body.

The operating system which you use (whether it be MS DOS, OS/2, MACH, Thoroughbred, Banyan Vines, Unix, or Novell), is directly related to the microprocessor in the computer. For example, the MACH operating system used in the Apple Mac (which use Motorola processors) cannot be loaded onto a machine run by an Intel processor without major modification. Likewise MS DOS cannot be installed onto a Mac since the operating system was developed

for the Intel family of processors.

The Math Co-Processor

Computers are basically simple animals that do an excellent job of turning numbers into meaningful pieces of information. However, when these numbers turn into complex calculations the microprocessor begins to bog down. Which is why Intel developed an add on chip known

as the math or numeric co-processor to run along side of the microprocessor.

In order for an application to take advantage of the math co-processor's capabilities, it must have the necessary code built in to make the necessary requests. Most basic applications such as word processors have no real requirements for floating point calculations, thus they will not use the math chip. Other programs, such as CAD/CAM, spreadsheets, GLUs (Graphic User Interface), multitasking operating environments, and animation, rely heavily on floating point. Thus a math chip is almost a prerequisite.

The Cache Co-Processor

Intel created the 82385 cache co-processor as a way to help slower system memory (RAM) keep up with the incredible speeds of the 386 processor. Using a buffer of high speed RAM (5 to 8 times faster than system memory) between the processor and system memory, greater system performance was immediately recognized.

Continued on p. 45



AST ON THE GO



Have you ever read an ad in the newspaper for a car that was perfect for your budget, only to be disappointed to see what you were actually getting for your dollar? Or saw an outstanding price for a computer only to get to the store and have a sales rep try to push you into something different because the system in the paper wasn't very good?

I've been witness to both of these, which would probably explain how skeptical I was when I saw the price tag on AST Research's new Exec 386xx/20 Portable Notebook. Word in the company was that AST's first entry in the portable market would resell at ANO for well under \$4,000.00. "So what is the catch?" I asked.

Turns out the AST Premium Exec 386xx/20 comes standard with more features than most similarly equipped desktop systems (only 75 pounds lighter).

BIG FEATURES

Born to fly, the Exec packs a lot of power. Boasting a 20 Megabyte lightning fast hard drive, 2MB of high performance RAM (expandable to 8MB), an Intel 80386SX 20MHz processor, 3 5 1/4" 1.44MB floppy drive, industry standard interface ports, stunning 32 grey scale VGA display system, a 3 hour internal battery, loads of software, and a wide assortment of options.

One of its most notable (pardon the pun) features is definitely the video display system. Providing



640x480 monochrome text and graphics resolution, the advanced CCFL (Cold Cathode Fluorescent Tube) backlight provides up to three times longer life than older EL (Electroluminescent) technology. The new supertwist LCD display provides a clear, paperwhite screen that's lighter and brighter than ever before.

The high-contrast display is easy to read and the adjustable display angle provides maximum viewing comfort.

NO PUNCHES PULLED

Instead of simply putting together just another portable, AST decided that the comfort of the user was of primary importance. One way they improved this was with a System Suspend/Resume feature.

This allows the user to save the operating state of the computer, including the contents of RAM and the display, by simply closing the cover with the power switch on. With the cover closed all system components will be powered down (or put to sleep)

except the memory and all system activity/processing will be suspended. When the cover is reopened, the computer's operating status will resume at the point the cover was closed.

MORE TO COME

Although the Exec 386xx/20 is the first portable from AST, it is most definitely not the last. Although not shipping, AST will also be offering a 12MHz 286 version soon.

Both the 286 and 386xx will be available with either a 20MB or 40MB hard drive. Currently, however, only the 20MB 386xx/20 is in mass production.

286 UPGRADEABLE

The Premium Exec notebooks are designed around a modular architecture which separates the processor component from the motherboard. This design, pioneered by AST in desktop computers, offers the ability to simply interchange the Premium Exec 286/12's processor module with a 386xx/20 processor module. Without compromising performance or features.

AST QUALITY

Premium Exec notebook computers offer the same quality, reliability and compatibility as AST's Premium and Basic desktop computers. AST's dedication to producing high-performance computers combining value and extra features is evident in both Premium Exec notebooks.





British Columbia Institute of Technology (BCIT)

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Date	Course	Course #	Duration	Fee
Feb 11	iBase IV Level 1	10376	4 wks	\$ 361
Feb 11	ACCPAC A/R	21648	4 wks	\$ 361
Feb 12	iBase IV Level 2	10316	4 wks	\$ 361
Feb 12	Lotus 1-2-3 Level 1	10120	4 wks	\$ 361
Feb 12	WordPerfect Level 2	10065	4 wks	\$ 361
Feb 14	Lotus 1-2-3 Level 2	10194	4 wks	\$ 361
Feb 14	WordPerfect Level 1	10026	4 wks	\$ 361
Feb 27	Introduction DOS	09991	6 wks	\$ 241
Mar 11	Vennart Publishing	21630	4 wks	\$ 161
Mar 11	ACCPAC A/R	21658	4 wks	\$ 361
Mar 12	iBase IV Level 1	10360	4 wks	\$ 361
Mar 12	Lotus 1-2-3 Level 2	10309	4 wks	\$ 361

Call BCIT at 414-5411 to register

Date	Course	Location	Fee
Feb 09	Intro to MS DOS	R/K/E	Call
Feb 23	Intro to WordPerfect	R/K/E	Call
Mar 09	Intro to MS DOS	R/K/E	Call
Mar 23	Intro to WordPerfect	R/K/E	Call
Apr 13	Intro to MS DOS	R/K/E	Call
Apr 27	Intro to WordPerfect	R/K/E	Call
May 11	Intro to MS DOS	R/K/E	Call
May 25	Intro to WordPerfect	R/K/E	Call

If your organization is looking for specialized training, or require fully equipped classroom facilities, let AND give you a hand. Talk to your AND rep for further information.

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Call your nearest AND office for further information

Q: I have heard a lot about RISC microprocessors. What is the difference between a RISC microprocessor and the processor inside my AST PC?

A: Basically you are asking what is the difference between RISC (Reduced Instruction Set Computing) and CISC (Complex Instruction Set Computing)?

The primary difference (aside from any proprietary state of the art changes adopted by RISC chip set manufacturers) is in the way that instructions are handled. Under RISC, when an application requests a process to be executed, it does so in small simple chunks - known as instructions.

The theory behind RISC, is that a processor can best perform when it is executing smaller easier to swallow pieces.



TECH • TALK

WITH
EDVAC

RISC processors are most common on workstation type computers developed by Data General, Sun, IBM, MIPS, and Hewlett Packard.

CISC technology, on the other hand, is the exact opposite. Instead of executing a bunch of small simple instructions, the applications provide instructions that are

more complex. The technology is most prominent in PCs powered by Intel 80386 series (not including the 486) and Motorola 68000 series of processors.

NOTE: CISC technology has been modified slightly with Intel's introduction of Pipe-Flow on the 486 family of microprocessors. Essentially, the application provides a complex instruction which the 486 processor then breaks down and executes.

Should you have any questions for TechTalk, please feel free to send them to:

ATTENTION: TECH TALK
c/o AND Office Automation
110 - 11100 Vancouver Way
Richmond, B.C.
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THE COMMON PC COLD



Viruses have become a reality unlike other industry threats. Many Fortune 1000 companies spend an absolute ton of time, money and resources protecting their PC environments from these annoying, not to mention costly, byproducts of disturbed minds.

A virus is simply a viral programming instruction that is embedded into an otherwise normal piece of software. When the software is run it begins spreading itself throughout other applications, corrupting them and making them unusable. The most common target for a virus is the COMMAND.COM file. Since the COMMAND.COM file is the heart and soul of Microsoft's DOS, a virus is most likely to gain the best results by hitting it.

Not all viruses are easily identifiable. For ex-

ample a virus may corrupt files in such a way as to simply change the numbers in a spreadsheet file or critical words in a word processing document. The microelectronic manufacturer "Boson" or "Jernaleen" virus can reformat and make your hard drive unusable (not least reformating). In most circumstances users think that there is a hardware problem such as memory faults or virus hiding the hard disk, when in fact a virus is the root of the problem.

Fortunately help is available. AMD Other Automation's successful support group offers a two step approach to "Virus Computing". The first is to use a product from McAfee Associates called Pro Scan ProScan scans systems and not only detects and identifies all files infected with known viruses. It removes viruses from all infected files and repairs

infected programs where possible. In addition, it identifies and removes any boot sector or partition table virus that may be present. Victims of viruses will also be disabled and removed.

Step 2 is a utility from Pro Scan Software called MALK VACCINE. Essentially it is a defense mechanism against viral infection. MALK Vaccine prevents viral reproduction and damage by stopping unauthorised alterations of vital disk areas including the COMMAND.COM file and by checking programs for changes before allowing them to run.

By following this simple two step approach you will be able to help in the war against computer viruses.



(The Law, P. Perlman, Chief Executive)

The cache co-processor works something like this. Whenever the microprocessor needs a second piece of data in for processing, it immediately makes a mirror image of that same piece of information into the high speed static RAM cache. Upon subsequent needs for data, chances are very high that it will ask for that same piece of data. Thus drastically improving the response time between retrieval and processing.

By introducing a built-in DRAM caching system into the i86 chip, there was no longer a requirement to rely on an external source to improve processor and memory relations. However, many PC manufacturers still include their own proprietary caching scheme to further improve data throughput.

Unlike a math co-processor, the cache co-processor is not dependent upon the applications themselves.

THE SOFTWARE QUESTION

One of the biggest concerns by PC users has been a lack of software which take advantage of the 386 and i86 processors. This, however, is being squashed by an arsenal of new products. Leading edge applications such as Windows 3.0, Autodesk Animator, Novell/386, OS/2, Paradox, and Wings, are hammering home the fact that the 386 and i86 pro-

cessors are here to stay.

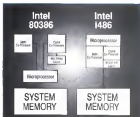
User users will find the i86 a definite treat. Since the latest release of Unix System V for the PC are designed strictly for 386 and 486-based systems, all of the software operating under it will as well. Some of the most infamous of these applications include WordPerfect, Oracle, Informix, AutoCAD, Lotus, and Fontware.

IMPLEMENTING THE 486

Although originally designed for high performance users, the 486 is making onto the desktops of everyday business users. AST's Bravo 486/33 is a perfect example of this. Designed as a general business system, the Bravo 486/33 packs the power of a workstation, at a price equal to or less than comparable 386 systems.

High performance users running OS/2, Unix, Novell, DCCAD, simulation, scientific, or animation applications and operating environments, should have no hesitation jumping right into the 486 forum.

For the general business population it is important that you analyze your



current and future needs. If your needs are word processing and basic spreadsheet then look no further than a 386sx. However, if graphics such as Windows 3.0, OS/2, or Open Desktop are on your horizon, giving a 486 system a second look may be worth your while.

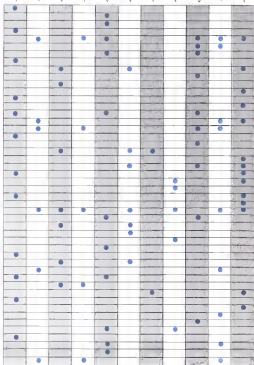
In brief, the Intel i86 family of processors is destined to become the desktop and file server of choice in 1991. From a price/performance standpoint it racks up impressive numbers, and should be given serious consideration.





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***NOTE: Prices listed are FOB (freight) and are subject to change without notice. Prices may vary, confirmation is required.

WILD



AND TATIONS

WELCOME ABOARD

AND Office Automation is proud to welcome two new additions to our rapidly growing team in Richmond, B.C. Mr. Edmond Koon, has been appointed to the position of Production Supervisor. He will be responsible for the co-ordination, scheduling, and planning in the system assembly area. Mr. Mike Windrow has been added to our sales force to help provide the same professional service AND clients have come to expect. We all wish them the very best here at AND.

CA ANNOUNCEMENTS

According to Computer Associates

(CA), two new announcements are in the workings for their ACCPAC line of products. Users can look forward to a version 6.0 of their ACCPAC Plus Accounts Payable, as well as a release for Microsoft Windows. More announcements from CA will be highlighted in the following months in a new column entitled "CA NOTES".

COME SEE US

AND Office Automation, in conjunction with Canon, Sharp Electronics, and Richmond Software (The Maximizer people), will be displaying the latest in portable offices at the annual Real Estate

Computer Show on February 18th, 1991 at the Italian Cultural Centre on Sloane Street in Vancouver. Hope to see you there!

CANON BJ-300 NOW IN

The new Canon BJ-300 narrow carriage printer is now in stock and ready to ship. After great anticipation, this latest offering from Canon will surely knock your socks off. Best of all its priced to please!



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